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BRIEFS

YUGOSLAV-USSR TRADE--At present goods deliveries between the USSR and Yugoslavia show a large deficit of \$400 million for Yugoslavia, an amount unprecedented in Yugoslav-Soviet trade. One of the important causes is the difficulties associated with transport. As a result, members of the section for developing economic relations with the USSR in the Yugoslav Economic Chamber have suggested that Soviet partners be asked to agree to a transition period of a month or two at the beginning of 1980 in order for all agreed-upon deliveries to be made. The total volume of trade planned for 1980 is about \$4 billion (\$1.8 billion to \$1.9 billion worth of goods from Yugoslavia and \$2.1 billion to \$2.2 billion from the USSR). These amounts do not include Yugoslav services (construction, tourism, etc.). [Excerpt] [Belgrade PRIVREDNI PREGLED in Serbo-Croatian 19 Nov 79 p 13]

CANADIAN DRILLING EQUIPMENT TO SIBERIA--Canadian firms producing drilling equipment are counting on a considerable export of their products to the Soviet Union. At present, the USSR is making significant purchases of drilling equipment in connection with the plans on exploitation of energy resources in Western Siberia. Canadian experience in the field of locating and exploiting crude oil and gas reserves in the arctic areas permit that country to tie great hopes to the Soviet market. An additional favorable circumstance, according to the director of the Petro-Canada firm, is the fuel situation in the USSR, from which it ensues that this country will become an importer of crude oil already in 1985. Such a prospect will force the USSR to increase its own extraction operations with the aid of Western technology. Last year, the Soviet Union purchased equipment for drilling in the arctic areas for 9.3 million dollars from Canadian firms. [Text] [Warsaw PRZEGLAD TECHNICZNY-INNOWACJE No 45, 11 Nov 79 p 28]

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## EMPLOYMENT AND WAGE DEVELOPMENTS IN FIRST HALF OF 1979

Prague PRACE A MZDA in Slovak No 9, Sep 79 pp 497-501

[Article by Engr Michal Veres, CSC, Federal Bureau of Statistics: "Development of Employment and Wages in the Czechoslovak Socialist Republic During the First Half of 1979"]

[Text] During the first half of 1979, the average headcount in the socialist sector of the national economy (without the JRD's [unified agricultural cooperatives]), in physical persons, was 6,463,063 persons, an increase of 62,858 workers (or 1 percent) over the same period of 1978. Within this total increase of the average headcount, the Czech Socialist Republic accounts for 27,013 workers (an increase of 0.6 percent); and the Slovak Socialist Republic, for 35,855 workers (an increase of 2 percent).

At organizations included in the state plan, the average headcount in physical persons increased over the first half of 1978 by 59,033 persons (or 0.9 percent) to a total of 6,399,075 workers; or after adjustment for converting part-time workers to full-time workers, by 53,840 persons, to a total of 6,260,316 workers. The increase in the number of workers at organizations included in the state plan was higher by 0.1 percentage point during the first half of 1979 as compared with the 1979 state plan.

The largest increases in employment, in physical persons, were in education (+3.2 percent), at planning and design organizations (+2.9 percent), in heat and power generation (+2.5 percent), health care (+2.3 percent), retail trade (+2 percent), centrally planned science and research (+1.9 percent), coal mining (+1.7 percent), motor transport (+1.3 percent), and communications (+1.2 percent). On the other hand, significant declines in the number of workers as compared with the first half of 1978 occurred primarily in the clothing industry (-1.1 percent), at state forests (-0.8 percent), in the leather, shoe and fur industry (-0.5 percent), and in the glass and ceramics industry (-0.3 percent).

On 30 June 1979, 2,915,738 women were employed in the socialist sector of the national economy (without the JRD's), i.e., 45 percent of the total headcount. The number of working women increased by 35,000 as compared with 30 June 1978.



Table 1. Number of Workers and Average Monthly Wages, By Principal Branches During the First Half of 1979

(1) Odvetvie (odbor činnosti)	(2) Priemerný evidenčný počet pracovníkov (fyzic. osoby)		(4) prírastok, úbytok (-) oproti 1.—6. 1978		(7) Priemerná mesačná mzda na fyz. osobu		(10) soš. sektor ek. = 100
	skutočnosť (3)	(5) v osobách	v %	(6)	skutočnosť v Kčs (8)	zvýšenie oproti 1.—6. 1978 v % (9)	
(11) Soc. sektor nřr. hosp. (bez JRD)							
ČSSR	6 463 063	62 868	1,0	2 539	2,6	100,0	
ČSR	4 598 797	27 013	0,6	2 550	2,5	100,4	
SSR	1 864 266	35 855	2,0	2 513	2,7	99,0	
(12) z toho (za ČSSR):							
(13) Priemysel celkom	2 616 449	18 401	0,7	2 666	2,9	105,0	
(14) z toho plánovacie skupiny:							
(15) ťažba uhlia	165 424	2 780	1,7	3 699	3,6	145,7	
(16) výroba tepla a elektriny	68 379	1 656	2,5	2 884	2,9	113,6	
(17) hutníctvo železa	150 803	1 425	1,0	3 019	2,5	118,9	
(18) chemický priemysel	126 257	1 120	0,9	2 704	3,9	106,5	
(19) gumársky priemysel	36 142	332	0,9	2 619	4,2	103,2	
(20) strojárstvo	973 579	8 516	0,9	2 697	2,8	108,2	
(21) priemysel stavebných hmot	111 679	628	0,6	2 664	2,3	104,9	
(22) drevospracujúci priemysel	114 105	683	0,6	2 402	2,6	94,6	
(23) priemysel křla a keramiky	83 936	-270	-0,3	2 332	3,0	91,8	
(24) textilný priemysel	213 232	627	0,3	2 181	2,5	85,9	
(25) konfekčný priemysel	54 135	-577	-1,1	2 161	2,8	85,1	
(26) koža, obuv, kožušiny	83 056	-421	-0,5	2 484	5,3	97,8	
(27) potravinársky prie- mysel	210 809	210	0,1	2 372	1,9	93,4	
(28) Stavebníctvo	549 868	3 008	0,6	2 793	2,0	110,0	
(29) Projektové organizácie	48 938	1 381	2,9	3 123	1,6	123,0	
(30) Štátne majetky	158 899	-213	-0,1	2 134	2,1	95,9	
(31) Štátne lesy	92 282	-726	-0,8	2 649	2,2	104,3	
(32) Železničná doprava	205 680	162	0,1	3 025	5,2	119,1	
(33) Automobilová doprava	100 571	950	1,3	2 834	2,5	111,6	
(34) Spoje	116 503	1 401	1,2	2 315	2,3	91,2	
(35) Vozobohod	225 182	4 417	2,0	2 047	0,9	80,6	
(36) Verejnó stravovanie	151 357	981	0,7	1 958	2,7	77,1	
(37) Komunálne služby	126 286	723	0,6	2 124	1,9	83,7	
(38) Školstvo	394 423	12 137	3,2	2 326	1,5	91,6	
(39) Zdravotníctvo	295 044	6 695	2,3	2 382	1,6	93,8	
(40) Veda a výskum	62 642	1 153	1,9	2 775	2,2	109,2	
(41) Okrem toho JRD <sup>1</sup>	603 556	-372	-0,1	2 612	2,2	102,9	

<sup>1</sup> Not including retired workers; instead of wages, gross wage payment.

Key:

- |                                                                 |                                              |
|-----------------------------------------------------------------|----------------------------------------------|
| 1. Branch (sector of activity)                                  | 5. Persons                                   |
| 2. Average headcount (physical persons)                         | 6. Percent                                   |
| 3. Report                                                       | 7. Average monthly wages per physical person |
| 4. Increase, decrease (-) in comparison with first half of 1978 | 8. Report, korunas                           |
|                                                                 | 9. Percent increase over first half of 1978  |
|                                                                 | 10. Socialist sector jointly = 100           |

Key to Table 1 continued:

- |                                                     |                                     |
|-----------------------------------------------------|-------------------------------------|
| 11. Socialist sector of the economy (without JRD's) | 26. Leather, shoe, fur industry     |
| 12. Of which /for CSSR)                             | 27. Food industry                   |
| 13. Industry jointly                                | 28. Construction                    |
| 14. Of which planning groups                        | 29. Planning, design organizations  |
| 15. Coal mining                                     | 30. State farms                     |
| 16. Heat, power generation                          | 31. State forests                   |
| 17. Ferrous metallurgy                              | 32. Rail transport                  |
| 18. Chemical industry                               | 33. Motor transport                 |
| 19. Rubber industry                                 | 34. Communications                  |
| 20. Engineering                                     | 35. Retail trade                    |
| 21. Building materials ind.                         | 36. Public catering                 |
| 22. Woodworking industry                            | 37. Municipal services              |
| 23. Glass, ceramics industry                        | 38. Education                       |
| 24. Textile industry                                | 39. Health care                     |
| 25. Clothing industry                               | 40. Science and research            |
|                                                     | 41. In addition, JRD's <sup>1</sup> |

Wages (without other personnel costs) paid to workers in the socialist sector of the national economy (not including the JRD's) during the first half of 1979 totaled 98.5 billion korunas, an increase of 3.4 billion (or 3.6 percent) in comparison with the first half of 1978. The rise in employment accounts for 27.7 percent of the increase in wages (3.4 billion korunas); and higher average monthly wages as compared with the first half of 1978, for 72.3 percent. Wages at organizations included in the state plan totaled 97.5 billion korunas, 3.5 percent more than last year. The volume of wages paid increased over last year by 2.1 billion korunas or 3.1 percent in the Czech Socialist Republic, and by 1.3 billion korunas or 4.7 percent in the Slovak Socialist Republic. The state plan for 1979 likewise anticipates a 3.5-percent increase over 1978 in the volume of wages paid, including reserves for wage-policy measures.

The average monthly wages per worker in the socialist sector of the Czechoslovak national economy (without the JRD's) increased over the first half of 1978 by 63 korunas (2.6 percent), to 2,539 korunas. For Czechoslovakia in 1979, the state plan anticipates an increase of 2.7 percent in average monthly wages, including reserves for wage-policy measures; or an increase of 2.4 percent without these reserves. The rise in average wages during the first half of 1979 was higher in the Slovak Socialist Republic (+66 korunas or 2.7 percent, to 2,513 korunas) than in the Czech Socialist Republic (+62 korunas or 2.5 percent, to 2,550 korunas). At organizations included in the state budget, the average monthly pay rose at the same rate and attained the same absolute level as in the entire socialist sector of the national economy (without the JRD's), in the CSSR as well as in the two national republics.

Among the individual branches of the national economy, the highest rises in average monthly wages, and the largest departures from the rate of rise planned for 1979, occurred in the following branches: leather, shoe and fur industry (+5.3 percent and +2.8 percentage points), rail transport

(+5.2 percent and +1.8 percentage points), the rubber industry (+4.2 percent and +1.7 percentage points), and the chemical industry (+3.9 percent and +1.4 percentage points).

In the unified agriculture cooperatives the gross work payment (calculated from the net work payment, for comparability with the other branches) of full-time workers increased by 56 korunas (2.2 percent) to 2,612 korunas. The average work payment in the JRD's exceeds the level of the average monthly wages in many of the productive and nonproductive branches.

The highest levels of average monthly wages in comparison with the average monthly wages for the entire socialist sector of the national economy (without the JRD's) were reported in the following branches: coal mining (index of 145.7), planning and design organizations (index 123), rail transport (index 119.1), ferrous metallurgy (index 118.9), heat and power generation (index 113.6), motor transport (index 111.6), construction (index 110), and centrally planned science and research (109.2).

As a result of the method used to compute average monthly wages per physical person (the nonadjusted number of workers), there are significant distortions in the average monthly wages, and thereby also in the wage ratios between branches, especially in those branches that employ a high proportion of part-time workers (workers with insignificant work commitments). These include primarily all branches of the nonproductive sphere, and also domestic trade, public catering, communications, publishing, and planning and design organizations.

The relationship planned for 1979 between the rise in labor productivity and the rise in average monthly wages was not observed during the first half of 1979 in most productive branches, as well as in industry as a whole. For industry as a whole the 1979 plan anticipates a rise of 3.8 percent in labor productivity, at a rise of 2.5 percent in average monthly wages; and in construction, a rise of 4.6 percent in labor productivity, at a rise of 2.5 percent in average monthly wages. In coal mining the plan for 1979 anticipates a 0.8-percent decline in labor productivity at a 3.3-percent rise in average wages, and thus the 99.9 percent fulfillment of labor productivity and the 103.6 percent average wages as compared with the first half of last year meant that the planned relationship in this branch was observed. The fuel and energy situation in January of this year was reflected the most unfavorably in the development of the relationship between labor productivity and average wages in heat and power generation. The relationship between labor productivity and average wages developed favorably only in the clothing industry. Taking into consideration the fulfillment of labor productivity in most industrial branches and in construction during the second quarter of this year, we can expect that the annual results in the development of labor productivity and of average wages will approximate the planned relationships.

Upon the application of the new wage conditions within the framework of rationalizing labor and the wage systems, the proportion of base wages within



Table 2. Structure of Wages in the Principal Productive Branches, and the Rise of Labor Productivity and Average Wages During the First Half of 1979 (CSSR)

(1) Odvětví (Sector)	(2)	Podíl celkové výplaty na mzdě v %				(8) Index výroby a produktivity v %	
		(3) Podíl základní výplaty a příplatků a náhrad (5)	(4) Podíl prémie (6)	(5) Podíl ziskového podílu (7)	(6) Podíl ziskového podílu (7)	(9) Index výroby (10)	(10) Index produktivity (11)
Přemyslový sektor (11)	(12)	80,6	13,8	1,7	2,0	1,9	2,9
celkový (13)	(14)	77,2	18,0	2,2	2,6	-0,1	3,6
hutnictví a těžba (15)	(16)	81,7	17,4	1,4	1,5	0,1	3,9
chemický průmysl (17)	(18)	74,9	19,3	0,1	1,7	2,8	4,2
strojírenství (19)	(20)	81,5	17,3	1,6	1,6	3,8	2,8
průmysl dřeva a dřeviny (21)	(22)	82,4	14,3	2,3	1,0	-0,1	2,3
textilní průmysl (23)	(24)	79,4	17,1	1,2	2,3	1,7	2,6
oděvní průmysl (25)	(26)	81,1	15,1	1,8	2,0	2,9	3,0
kožedělný průmysl (27)	(28)	79,1	18,1	1,2	1,6	2,5	2,7
obuvnický průmysl (29)	(30)	81,9	16,0	2,0	1,0	4,1	2,8
potravinářský průmysl (31)	(32)	78,1	17,5	0,9	3,5	2,2	3,3
stavební (33)	(34)	80,6	13,8	1,7	3,9	1,6	1,9
projektové organizace (35)	(36)	84,4	12,9	1,5	1,2	2,3	2,0
statistické služby (37)	(38)	77,7	14,3	3,3	4,7	—	1,6
statistické služby (39)	(40)	85,4	6,3	1,0	4,3	—	2,1
statistické služby (41)	(42)	82,1	13,1	1,4	3,4	—	2,2
železniční doprava (43)	(44)	83,1	11,6	0,9	1,4	—	3,2
automobilová doprava (45)	(46)	88,8	7,4	1,6	2,2	—	2,5
spoje (47)	(48)	80,6	11,9	1,7	8,8	—	2,3

Key:

- Branch (sector of activity)
- Percent of total wages paid
- Base wages, including extra pay and allowances
- Premiums and bonuses
- Charged to cost
- From premium fund
- Profit-sharing
- Increase, decrease (-) in comparison with first half of 1978, percent
- Labor productivity
- Average monthly wages
- Industry jointly
- Of which planning groups
- Coal mining
- Heat, power generation
- Ferrous metallurgy
- Chemical industry
- Rubber industry
- Engineering
- Building materials industry
- Woodworking industry
- Glass, ceramics industry
- Textile industry
- Clothing industry
- Leather, shoe, fur industry
- Food industry
- Construction
- Planning, design organizations
- State farms
- State forests
- Rail transport
- Motor transport
- Communications

the total wages paid will decline, and particularly the proportion of premiums and bonuses charged to cost will increase. The proportion of base wages is the lowest in those branches that completed the revision of the base wage tariffs in the first stage, i.e., in 1973-1976. The proportion of profit-sharing within the total wages paid ranges from 1.0 percent (in the building materials industry, and the clothing industry) to 5.8 percent (in communications). The proportion of premiums and bonuses paid from the premium fund ranges from 0.9 to 2.5 percent, except in the rubber industry (0.1 percent) and at the planning and design organizations (3.3 percent).

In comparison with the first half of 1978, the average wages of blue-collar workers rose faster in most branches than did the wages of technical-economic workers. The greatest differences between the rise in the wages of blue-collar workers (respectively of the operating and service personnel) and in the wages of technical-economic workers are in rail transport (5.1 percentage points), in the leather, shoe and fur industry (1.8 percentage points), on state farms (1.3 percentage points), and in ferrous metallurgy (1.1 percentage points). The rapid rise of the average monthly wages of the operating and service personnel in rail transport (8.4 percent) was influenced primarily by raising the brackets of the wage tariffs as of 1 January 1979, and by increasing the wage preferences for selected critical trades in railroad operation.

The rise in the wages of technical-economic workers was distinctly greater than in the wages of blue-collar workers (respectively of the operating and service personnel) in coal mining (by 1.8 percentage points), in engineering and communications (by 1.3 percentage points), and in the food industry (by 0.9 percentage point).

The relationship between the levels of the average wages of blue-collar workers (respectively of the operating and service personnel) and of technical-economic workers varies considerably. Among the industrial branches, the level of the wages of technical-economic workers in relation to the wages of blue-collar workers (to which we assign an index of 100) is the lowest in engineering (108.4), and the highest in the textile industry (133.1) and the clothing industry (128). The wages of technical-economic workers attain an incommensurately high level, in comparison with most industrial branches and with industry as a whole, primarily at state forests, in communications, rail transport, and in the leather, shoe and fur industry. The wages of blue-collar workers (respectively of the operating and service personnel) attained the lowest level in communications, the clothing industry, textile industry, and in municipal services.

The ratio of the number of blue-collar workers (respectively of the operating and service personnel) per technical-economic worker varies considerably by the individual branches of the national economy, from 6:1 (in coal mining) to 2.5:1 (in engineering). In rail transport the ratio of the operating and service personnel to technical-economic workers is 1.3:1.

Table 3. Average Monthly Wages of Blue-Collar Workers (Operating and Service Personnel) and Technical-Economic Workers, Their Relative Wages, and the Ratio of Blue-Collar Workers (Operating and Service Personnel) to Technical-Economic Workers

(1) Otvetvie (odbor činnosti)	Počet robot- níkov (POP) pripr. na 1 THP (2)	(3) Priemerná mesačná mzda na fyzické osoby						
		(4) Poplatníci - POP			(5) THP			
		v Kčs (6)	zvýš. oproti 1.-6. 1978 v % (7)	mzda za priem. = 100 (8)	v Kčs (6)	zvýš. oproti 1.-6. 1978 v % (7)	mzda za priem. = 100 (8)	Ratio B.1444 = 100 (9)
(10) Priemysel celkom (11) z toho plánovacie skupiny:	3,4	2 612	3,0	100,0	2 980	3,1	100,0	114,1
(12) ťažba uhlia	6,0	3 757	3,6	143,8	4 473	5,4	150,1	119,1
(13) výroba tepla a elektriny	2,7	2 809	3,0	107,5	3 141	2,5	105,4	111,8
(14) hutníctvo železa	4,1	2 903	2,7	114,6	3 496	1,6	117,3	116,8
(15) chemický priemysel	2,9	2 680	1,1	102,6	3 129	4,2	105,0	116,8
(16) gumársky priemysel	4,2	2 587	4,5	99,0	2 872	4,0	96,4	111,0
(17) strojárstvo	2,5	2 658	2,7	101,8	2 880	3,0	96,6	108,4
(18) priemysel stavebných hmôt	3,5	2 631	2,1	100,7	2 929	2,8	98,3	111,3
(19) drevospracujúci priemysel	4,8	2 338	2,7	89,5	2 795	2,2	93,8	119,5
(20) priemysel skla a keramiky	5,0	2 248	3,3	86,1	2 807	2,9	94,2	124,0
(21) textilný priemysel	5,4	2 078	2,5	79,6	2 765	2,7	92,8	133,1
(22) konfekčný priem.	5,4	2 071	2,7	79,3	2 651	2,8	83,0	128,0
(23) koža, obuv, kožušiny	5,6	2 399	5,7	91,8	3 003	3,9	100,8	125,2
(24) potravinársky priemysel	3,9	2 306	1,9	88,3	2 744	2,8	92,1	119,0
(25) Stavebníctvo	3,1	2 803	2,2	107,3	3 090	1,7	103,7	110,2
(26) Štátne majetky	5,8	2 396	2,2	91,7	2 865	0,9	96,1	119,6
(27) Štátne lxy	3,0	2 517	2,3	96,4	3 072	1,5	103,1	122,1
(28) Železničná doprava <sup>1)</sup>	1,3	3 562	8,4	136,4	3 000	3,3	100,7	84,2
(29) Automobilová doprava	3,5	2 747	2,0	105,2	2 670	1,8	89,6	97,5
(30) Spoje <sup>1)</sup>	2,8	1 967	1,5	75,3	3 005	2,8	100,8	152,8
(31) Komunálne služby	4,3	2 080	1,8	79,6	2 451	2,0	82,2	117,8

<sup>1)</sup> Operating and service personnel in rail transport and communications.

Key:

- |                                                                                                  |                                 |
|--------------------------------------------------------------------------------------------------|---------------------------------|
| 1. Branch (sector of activity)                                                                   | 10. Industry jointly            |
| 2. Number of blue-collar workers (operating and service personnel) per technical-economic worker | 11. Of which planning groups    |
| 3. Average monthly wages per physical person                                                     | 12. Coal mining                 |
| 4. Blue-collar workers (operating and service personnel)                                         | 13. Heat, power generation      |
| 5. Technical-economic workers                                                                    | 14. Ferrous metallurgy          |
| 6. Korunas                                                                                       | 15. Chemical industry           |
| 7. Percent increase over first half of 1978                                                      | 16. Rubber industry             |
| 8. Wages in industry = 100                                                                       | 17. Engineering                 |
| 9. Wages of blue-collar workers (operating & service personnel) = 100                            | 18. Building materials industry |
|                                                                                                  | 19. Woodworking industry        |
|                                                                                                  | 20. Glass, ceramics industry    |
|                                                                                                  | 21. Textile industry            |
|                                                                                                  | 22. Clothing industry           |
|                                                                                                  | 23. Leather, shoe, fur industry |
|                                                                                                  | 24. Food industry               |
|                                                                                                  | 25. Construction                |
|                                                                                                  | 26. State farms                 |



Key to Table 3 continued:

27. State forests <sup>1</sup>  
28. Rail transport  
29. Motor transport

30. Communications <sup>1</sup>  
31. Municipal services

An urgent problem emerges from a comparison of the number of blue-collar workers and technical-economic workers during the first half of 1979 and during the first half of 1978. In most branches, besides coal mining and construction, the number of technical-economic workers increased (for example, by 5 percent in the woodworking industry, 3.2 percent in communications, and 2.9 percent on state farms). On the other hand, the number of blue-collar workers declined in most branches in comparison with last year. In all the branches where the total number of workers declined in comparison with last year, the number of technical-economic workers rose while the number of blue-collar workers dropped.

1014

CSO: 2400

BRIEFS

ARGENTINIAN DELEGATION'S ACTIVITIES--The official Argentinian delegation, headed by Alejandro Estrada, minister of foreign trade, arrived in Prague on 2 November for negotiations on mutual goods exchange between the two countries and on industrial and scientific-technical cooperation. It will attend the fourth session of the mixed Czechoslovak-Argentinian Commission. [Prague RUDE PRAVO in Czech 3 Nov 79 p 2 AU] J. Nagr, CSSR Minister of Agriculture and Food, received A. Estrada, Argentine Minister of Foreign Trade, to discuss mutual economic relations and the possibilities of expanding scientific-technical cooperation in agriculture and the processing industry. The reception was attended by Argentine's ambassador Alberto Felipe Dumont. [Prague PRACE in Czech 7 Nov 79 p 3 AU]

CSO: 2400

DEVELOPMENT OF SHIPBUILDING INDUSTRY REVIEWED

East Berlin SEEWIRTSCHAFT in German Vol 11 No 10, Oct 79 pp 476-483

[Survey by Professional Association for Vehicle Construction and Transportation, Chamber of Technology: "Four Thousand Ships in 30 Years--A Production Documentation on GDR Shipbuilding]

[Text] Since the founding of our republic, ships have been among the traditional export items. In three decades, approximately 80 percent of all new vessels (related to dimensional tonnage) were exported. The chief consumer was and is the Soviet Union, whose unselfish assistance made the development of a shipbuilding industry in the GDR at all possible. Specific characteristic and inspiring moments of this development, which will be remembered on the thirtieth anniversary of the founding of the GDR are essentially the following:

The revolutionary social changes in the countries of Eastern Europe and Asia accomplished as a result of World War II and the postwar development, together with the solidary support of the national-revolutionary liberation movements, made it necessary to develop independent export relationships, to break the ocean-transport monopoly of the capitalistic shipbuilders, and to create domestic socialist commercial fleets.

The USSR fleet had on 1 July 1938 with 1.27 million BRT only a 1.9-percent share in the world's commercial fleets. The USSR lost a large amount of its ships during World War II. The other socialist countries had no ocean transport capacity of any national economic importance.

As a result of the predatory fascist war, there was acute food shortage in many countries of Eastern Europe. Fishing was done only in the form of coastal fishing with cutters and open boats. The damages to agriculture could not be overcome in a few years. There was a lack of technology, fertilizers and the necessary preliminary conditions for large-scale animal production. Food recovery from the ocean offered an alternative which promised help over the short term. This required fishing boats which would be readily available and which could only be very simple in accordance with the production facilities in the first years.



The Potsdam agreement forced the German people to make retribution for a part of the damages caused by the fascist aggressors in the Soviet Union and other countries in the form of reparations. The reparation anticipated chiefly industrial equipment and finished products.

In view of the considerable delivery obligations and the maritime and inland ships needed for the national economy the only maritime shipyard which was already 100 years old, the Neptun Shipyard in Rostock, and the inland shipyards in Rosslau, Boizenburg, Magdeburg-Rothensee and Brandenburg--which used to build chiefly tugboats, inland vessels and dredgers--was quite insufficient.

The Soviet military administration in Germany, which had to assure the reparation requirements stipulated by the Allies, did not conceive of this "assuring" as a simple requirement or decision, but assisted to a large extent in establishing the operations necessary for realization of the reparation shipments, among which shipyards and supplier companies. Special importance must here be given to Decree No 103 of 7 June 1948, in which the establishment of shipyards was ordered for the building of vessels for the fishing fleet in Stralsund, Wolgast and Damgarten, together with the broadening of production for the shipyards already in operation. It was decreed that the production capacity of the shipyards in operation in the Soviet occupation zone of Germany be increased and be brought by 1956 to a stage which ascertains the construction of 158 loggers, 34 seiners and 159 cutters (a total of 351 units) per year. It was also decreed that the Ingenieurbau Shipyard in Stralsund be built for an annual production of 100 loggers, and that production be started on 1 January 1949.

To build a shipyard on the territory of the former airport in Damgarten Kreis which--starting on 1 January 1949--can build 120 cutters of 50 ton water displacement per year.

Finally, the population in the coastal area had increased considerably in the postwar period. New jobs had to be created for the long term. The founding of the GDR and its inclusion in CEMA made it both necessary and possible to develop stable economic relationships with the socialist countries on the basis of mutual advantages. For payment of the raw materials and fuels required in large amounts it was important to offer the export trade export products for which there was a guaranteed long-term demand (e.g. fishing, maritime and inland passenger ships, research and specialty ships). Added to this is the fact that ships are also objects of value with which a high foreign currency volume is attainable. With the five-year plan decided upon at the Third SED Congress in 1950, the GDR proceeded to long-range economic planning. This means that a long-term perspective was also delineated in the shipbuilding of the GDR and the development of a domestic shipyard industry was decided upon.

Plans for reconstruction of the Neptun Shipyard and for new shipyard constructions in Stralsund, Wismar, Warnemuende and Wolgast and, finally, the entire construction program of the shipyards for the two-year plan were the result of German-Soviet cooperation. Soviet orders, Soviet experience, and Soviet material put their mark on the GDR shipbuilding industry. The extraordinary

requirements of the USSR made it possible to specialize the shipyard and supplier companies at the time of their foundation in production of definite types of vessels and ship equipment.

Section 4 founded in 1956--shipbuilding--as a work organ of the permanent commission for machine construction of the CEMA countries contributed to the systematic development and basic orientation of the economic and scientific-technical cooperation of the CEMA countries in the shipbuilding sector. The work done within the framework of Section 4 in the fifties on the sectors of research and development, projects and construction, standardization and typification were the starting point for specialization of the manufacture of ships and nautical equipment in the subsequent years. These series, which are considerable by international standards, are an essential effect of the socialist-economic integration. The large-scale serial production accelerated a complex rationalization of the shipyards, optimally adapted to the series type in question and the establishment of product-oriented production lines in the supplier companies.

The more than 120 types of vessels from more than 3 decades of GDR shipbuilding extend from the wooden 12 m cutter for coastal fishing to the 120 m highly automated fishing processing ship "Atlantik Super Trawler" for worldwide use, from the 422 t coastal motorboat to the 23,200 ton universal freighter OBC and the full container ship of the "Mercur" series for 840 containers, from the inland passenger ship "Turgenev" for 160 deck passengers to the ocean passenger liners of the "Ivan Franko" series with 750 cabin accommodations and from the 400 PS tugboat to the ocean "bucket chain dredgers" with a hauling output of 750 m<sup>3</sup>/h and a maximum bagger depth of up to 24 m.

Development and production of these types of ships illustrate how the recommendations of the CEMA and the socialist-economic integration, especially with the USSR, made it possible to realize a long-term construction program in accordance with the economic possibilities of the GDR in an economic manner. In the present five-year plan 1976 to 1980, GDR shipbuilding has specialized chiefly in fishing and fish refrigerator ships, full container vessels and container-oriented multiple-purpose freighters.

It is especially shipbuilding for fishing which has been to date a chief orientation in the GDR shipbuilding industry as to what enormous development the technical progress has accomplished in this sector (Table 1).

GDR shipbuilding has succeeded by organized productive joint operation not only conditioned by the product, in which specific experience, especially that of Soviet fishermen and operators, was directly applied from the predecessors in fishing vessels to new developments, in systematically improving the working and living conditions of deep sea and coastal fishers from one type of ship to the succeeding one. Qualitative results of this development are, for example:

1953: Refrigerator vessels for fishing,

1959: Fishing boats sternside catching with mechanized catcher device handling and fish processing, deep freezing technology,

1962: Catching and freezing vessels for use in the tropics,  
 1962: Adjusting propeller devices to large series ships,  
 1965: Stern catchers in cutter size,  
 1966: Belt freezing devices for mechanized freezing,  
 1972: Super trawler, autonomous use for 70 days, safety coolant R 22.

#### From Cutter to Container Ship

	1949	1979
Goods production	120 mill. DM	over 4,000 mill. DM
Number of ship types	3	15
Ship types	Cutter Seiners Loggers	Full container ships Piece freighters Universal freighters Specialized mass goods ships Supertrawlers Fishing training ships Cooling ships Inland passenger boats Thrust boats
New construction	≈12,000 BRT	≈405,000 BRT
Number of new constructions	69	58
Average ship size	174 BRT/ship	7,000 BRT/ship
Largest ship type	Fishing logger	Full container ship Type "Mercur"
Dimension	≈255 BRT	17,834 BRT
Overall length	38.50 m	169.74 m
Carrying capacity	157,00 t	14,720,00 t
Drive power	220 (300) kW (PS)	12,800 (17,400) kW (PS)
Speed	9.4 kn	20.4 kn

Table 1 - Development of yearly catches for selected fishing boat styles

Type of ship	First ship in operation	maximum yearly	Crew	Drive power kW (PS)
12 m cutter	1956	80 t	2	44 (60)
17 m cutter	1946	150	4	59 - 110 (80 - 150)
24 m cutter	1951	350	7	147 (200)
26 m cutter	1957	1,100	8	184 (250)
Logger	1949	1,000	23	294 (400)
Medium trawler	1957	3,600	26	297 (540)
Commuter trawler	1966	6,500	22	1286 (1750)
Freezing trawler	1966	2,700	23	736 (1,000)
Catch and freezer ship "Tropic"	1962	5,600	76	1,220 (1,660)
Catch and freezer ship "Atlantik"	1966	8,000	81	1,705 (2,320)
Catch and processing ships "Atlantik"				
Supertrawler	1972	14,000	91	2,850 (3,880)

Table 2 - Start of deliveries or export of new ships from the GDR

Year	Country	Type of ship	Shipyard
1946	USSR	Fishing cutter	Albewerft Bolzenburg, Rosslauer shipyards, Shipyards Berlin & others
1955	Poland	Icebreaker "Puma"	VEB Rosslauer shipyard
1955	Albania	Fishing cutter	VEB shipyard Fuerstenberg
1956	Burma	Scow	VEB Peene shipyards Wolgast
1956	Czechoslovakia	Tug	VEB shipyard "Neptun" Rostock
1957	Bulgaria	3,700 t freighter "Christo Botew"	VEB shipyard "Neptun" Rostock
1957	Romania	Bagger Type 401	VEB Rosslauer shipyard
1957	FRG	Inland freighter "Gustav Koenig"	Shipyard
1957	Bolivia	Port tug	VEB Vokkswerft "Ernst Thaelmann" Brandenburg
1957	China	10,000 t freighter Series Type IV MS "Lanshou"	VEB Warnow shipyard Warnemuende
1957	Island	Steel cutter "Hunt"	VEB shipyard Fuerstenberg
1960	Vietnam	? of series "Nord- stern", MS "Algenib" of series Type IV, MS "Sierra Maestra"	VEB Warnow shipyard



1961	Egypt	Fire extinction boat	VEB shipyard for yachts
1962	Sweden	Fishing cutter	VEB Volkswerft "Ernst Thaelmann" Brandenburg
1964	Norway	Freighter of series Type VI, MS "Janecke Reed"	VEB Warnow shipyards Warnemuende
1964	Denmark	Cutter "Vardberg"	VEB Elbe shipyards Boizenburg
1965	Tunisia	Cutter HT 200 "Nannoun"	VEB Rosslauer shipyards
1966	Sansibar (Tanzania)	Cutter Type HX300 "Mawondoa Tabu"	VEB Rosslau shipyard
1966	Switzerland	Freighter of series Type VI, MS "Cassarate"	VEB Warnowerft Warnemuende
1968	France	Freighter of series Type VI, MS "Anjou"	VEB Warnow shipyards
1969	India	Cutter Type HD 562 "Matsaya Vigyani"	VEB Rosslauer shipyards











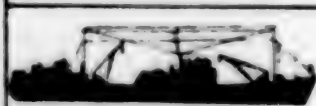
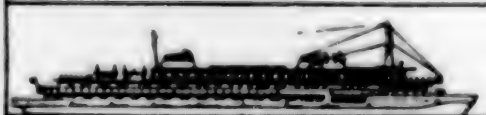

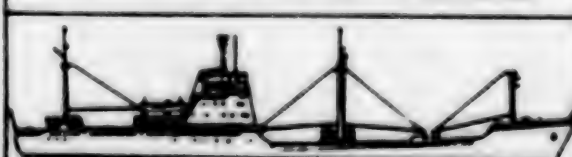
As a first freighter, the VEB Warnow shipyard in Warnemuende launched MS "Jalamani" on April 24, 1970, a 13,700 t ship of series Type ly K-I-D for India.

1969	Great Britain	Fishing cutter of series D 562 "Shika"	VEB Rosslauer shipyard
1972	Algeria	Cutter HT SK 250 "Chiffa I"	VEB Elbe shipyards Boizenburg/Rosslau
1974	Yugoslavia	Freighter of ocean series MS "Baltik"	VEB Warnow shipyards Warnemuende
1975	Finland	OBC "Finn timber"	VEB Mathias Thesen shipyards Wismar
1976	Bermuda	Multiple-purpose freighter of series "Neptun 401" "Hans Krueger"	VEB shipyards "Neptun" Rostock
1976	Panama	Piece goods freighter MS "Ivory Tellus"	VEB shipyard "Neptun" Rostock
1979	Hongkong	OBC "Fengtien"	VEB Mathias Thesen shipyard Wismar
1979	Greece	OBC "Wismar"	VEB Mathias Thesen shipyard Wismar

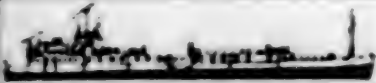
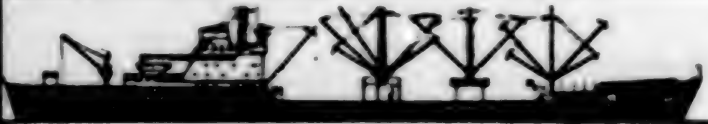
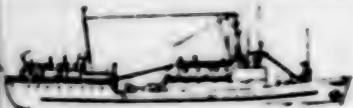
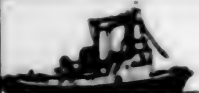




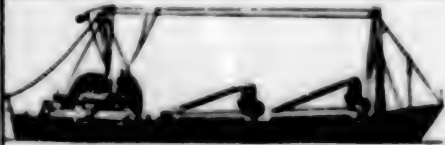



Table 3 - Construction program of GDR Shipbuilding in 1979

Type of ship	Overall length m	Dimensions BRT	Capacity t	Drive power kW (PS)	Speed kn	Shipyard
Full container ships of type "Mercur" for 840 container	169.74	17.834	14.720	12.800 (17,400)	20.4	VEB Warnow shipyard Warnemuende
Mass goods freighters with highest ice class UL-ESC	162.10	13.481	19.588	8,240 (11.200)	14.5	VEB Warnow shipyard Warnemuende
Multiple purpose freighters of type OBC for bulk goods and container travel	176.10	16.200	24.000	8,240 (11,200)	16.8	VEB Mathias Thesen shipyard Wismar
Piece good or semi container ships of "Monsun" type	157.60		17.397	8,240 (11.200)	18.8	VEB Warnow shipyards Warnemuende
Piece good or semi container freighters Type "Meridian"	156.84	10.256	13.800	8.240	18	VEB Warnow shipyards Warnemuende
Piece good or semi container freighters Type "Ozean"	152.75	9.014	13.780	8.240 (11.200)	19	VEB Warnow shipyards Warnemuende
Piece good or semi container freighters type "Neptun"	150.17	9.100	12.850	6.620 (9.000)	18	VEB shipyards "Neptun" Rostock
Piece good or semi container freighters Type "Poseidon" (Neptun 284/Neptun 487)	120.60	5.750	7.486	5.300 (7.200)	16.8	VEB shipyard "Neptun" Rostock

Container-Inland-Coastal Motor ships	82.00	1.007	1.636	882 (1.200)	20.75 km/h	VEB Elbe shipyards Boizenburg/Rosslau
Catchers and processors of type "Atlantik Supertrawler" with a daily treatment and processing capacity of 120 t fish Fishing training ships on basis "Atlantik Supertrawler" Deep freezing ships of type "Kristall" for handling frozen fishing products at sea and their transport into port 360 passenger inland passenger ships for tourism on inland waterways of the USSR	101.60	3.147	2.080	2.850 (3.880)	14.6	VEB Volkswerft Stralsund
	152.77	11.745	9.600	6.620	17.2	VEB Mathias Thesen shipyards Wismar
	125.00	4.900	540	735 (1.000)	26 km/h	VEB Elbe shipyards Boizenburg/Rosslau
Inland passenger boats Type III for 124 passengers for short distance recreational areas of thrust boats for GDR inland shipping traffic	28.50			90 (122)	18 km/h	VEB Yacht shipyards Berlin
	10.90			103 (140)	7.5 km/h	VEB Yacht shipyard Berlin

	Shiptype	No.	DRT	ldw	Launched between
	Logger	980	255	160	1948 - 1959
	Cutter	750	48	10	1946 - 1956
	Seiner	303	102	52	1947 - 1959
	Catcher-Freezer	185	2857	1130	1966 - 1976
	Medium trawler	171	502	258	1957 - 1960
	Ocean tug 400 PS	140	130	35	1952 - 1960
	"Atlantik-Supertrawler"	125	3930	2068	1972 - 1979
	Catcher-Freezers	86	2435	862	1962 - 1966
	26-m Cutter	50	131	75	1957 - 1959
	Repair ships	51	487	210	1958 - 1978
	Freezers	49	885	227	1953 - 1956
	Inland passenger boats	49	2468	224	1953 - 1961
	Freighters	48	3170	4288	1958 - 1962
	Freighters	48	3725	4225	1963 - 1967



	Shiptype	No.	GRT	t dw	Launched between
	Supply ships	38	720	193	1969 - 1974
	Freighters	34	8160	13620	1970 - 1973
	Catcher-Freezers	34	1100	604	1968 - 1971
	Ocean tug	34	180		1967 - 1970
	Freighters	34	9727	12882	1968 - 1972
	Freighters	32	3600	4636	1968 - 1972
	Freighters	31	9437	12375	1963 - 1969
	Coastal motor boats	31	199	422	1968 - 1973
	Coastal motor boats	25	877	643	1959 - 1963
	Coolers	25	11300	8280	1970 - 1973
	Commuter trawlers	23	895	530	1966 - 1967
	Freighters	21	10977	12000	1972 - 1977



Dimensional comparison 12 m cutter and Type "Mercur" container ship

9243  
CSO: 2300

GERMAN DEMOCRATIC REPUBLIC

WEST GERMAN CRITIQUE OF GDR AGRICULTURAL POLICY DEVELOPMENT

Frankfurt/Main FRANKFURTER ALLGEMEINE in German 17 Nov 79 p 15

[Article by Hans Herbert Goetz: "An Agricultural System with Mammoth Enterprises--Thirty Years of Agricultural Policy in the GDR." For a recent West German evaluation of the status of GDR agriculture, see JPRS 74505, 1 Nov 79, No 1949 of this series, pp 84-88]

[Text] As soon as you cross the German-German border the difference leaps to the eye: on our side, fields of various dimensions, smaller machines; in the GDR, huge fields, heavy technology. Nowhere else is the difference between the two societies more evident. The farmer has become a "cooperative farmer." The enterprises are much larger than were the former noblemen's estates. The main objective of communist agricultural policy is to achieve similarity of living conditions in cities and in the country, and to introduce industrial production methods. Such objectives, which apparently do not imply a statement of value, prove politically explosive only when they are forced to fit a pattern of class struggle. In agricultural policy too, communism claims to have the better system. Facts do not bear out this claim.

The present GDR agricultural policy was determined for the last time in the SED program which was adopted by the Ninth Congress in May 1976. The objectives listed range from the demand for a systematic increase in the production and efficiency of agricultural and food-producing enterprises, to the specialization of enterprises and their concentration in large production units. However, the agricultural policy practiced in the GDR is older than the GDR itself, since it began immediately after the end of the war, in 1945, under Soviet occupation, with the agrarian

reform, i.e. the expropriation and distribution of all enterprises of more than 100 hectares, and the creation of state farms (VEG).

During a second phase devoted to collectivization, from 1952 to 1960, small and medium-size farms were organized in "cooperatives," mostly against their wishes; at first, these still existed in three different forms with "increasing" degrees of "socialization of the means of production." This process, which involved much human suffering, resulted in the replacement of 765,000 agricultural enterprises by 19,000 "agricultural producer cooperatives" (LPG), mostly of type 3, which was already fully collectivized, plus 600 state farms.

The third phase was characterized by the beginning of "cooperation" in the communist sense--it lasted until the beginning of 1972; in hindsight, it is now obvious that it was only a prelude to the fourth stage, more dramatic again, during which the specialization of enterprises in crop or in animal production, and, therefore, the destruction of operational unity was accomplished with a ruthlessness which Europe had never experienced before.

The GDR now has only large enterprises of 4,000 to 6,000 hectares. To a large extent, the process is completed; the "cooperative crop production departments" (KAP) organized during this phase as a preliminary to specialization are gradually disappearing: in 1976, 1,000 operation units still existed in this early form, against only 161 according to the recent statements of Gerhard Grueneberg, since 1960 Politburo member in charge of agricultural policy. Parallel to this process, the number of fully specialized crop producing LPG's has increased rapidly. Crop production is now concentrated in 1,159 large cooperatives and 217 truck-gardening cooperatives.

Animal production is being developed along the same lines, but it is more involved and, therefore, progresses more slowly. The objective is to have dairy farms with 2,000 or more cows, swine combines with up to 80,000 animals, fresh egg combines with 500,000 laying hen units. However, in 1980 only 20 percent at most of animal production will be concentrated in such large installations operating in shifts after an industrial model. At present, the scant 2,900 cooperatives specializing in animal production, and the 333 state farms must still, for the most part, make do with the old stalls.

In addition to enterprises of this kind, 14 districts of the GDR now own one agricultural industry association (AIV) each, comprising several cooperatives (30,000 to 40,000 hectares), agrochemical centers and other auxiliary enterprises. The objective is to test in actual practice if such giant groupings of enterprises are not relatively better suited to solving all the problems which have resulted from forced specialization,



and especially to see if they can succeed in achieving "an in-depth improvement of cooperative relationships" (SED party program).

### Yields Lag Behind Planned Objectives

What has been achieved to date, first in measurable quantities? As far as cereals are concerned, the GDR can to some extent sustain comparison with the FRG. Yields per hectare have steadily increased from 29.2 quintals in 1965 to 36.4 and 38.6 in the last 2 years. In the FRG, yields per hectare average more than 40 quintals; last year they even fell short of 45 quintals. In truck crops, the GDR is far from doing as well. "Let's get potato yields for peace!" called a slogan in December 1949. The "reports" of the (East) German Agricultural Society contain a graph with three figures: potato yields for /1878/ [in boldface], 85.7 quintals; for 1937, 191 quintals; and 220 quintals is the proclaimed objective. This 30-year old objective has generally not yet been achieved in the GDR, a "potato-growing land" if there ever was one. Only in good years does the average for all GDR enterprises approach prewar yields obtained in the West.

The picture is not much better for sugar beets: as a rule, yields per hectare are at least 50 percent higher in the FRG; only in bad years do the yields on our side fall under 400 quintals; in good years they vary between 420 and 477 quintals; in the GDR, yields hover around the 300 quintal mark; they often lie below. This development is all the more surprising as, to some extent, the GDR is spreading more mineral fertilizers on its fields than West German enterprises. The dairy yields have reached approximately 3,800 liters per cow; in the FRG, they have exceeded 4,000 liters since about 1975.

The lag in the truck-crop production seems puzzling. In the West, "industrial production methods" as they are practiced in the GDR are not considered suitable at all for potato production. In the East, the lag is attributed to other causes: "We have underestimated the difficulties. Above all, we still do not have seed material suitable for industrial production."

### Figures Are Not Compared With Those in the West

Yet: Rising GDR agricultural production curves are, in the eyes of the SED, sufficient proof that they have chosen the right way. Nevertheless, comparisons with figures obtained in western countries are almost never published in the GDR press. In the GDR also—as in all industrial countries—a steadily decreasing number of farmers are producing ever more. According to Grueneberg, "cooperative farmers and agricultural workers have doubled plant products output between 1949 and 1978.

During the same period, production of beef cattle increased 9.5-fold, that of milk 5.5-fold, and that of eggs 22-fold, while the number of those employed in agriculture decreased by about 38 percent compared with 1950."

It is considered particularly important that the GDR has been self-sufficient since about 1973 (except for cereals, especially feed grains, and certain kinds of fruits and vegetables) and in addition, according to Gruenberg, "has made a non-negligible contribution to exports." True, there has been remarkable progress in crop and animal production, but the lag in productivity per unit area, compared with that of the FRG, has not decreased but increased. Most noticeable is the lag in workers' productivity: "In spite of current increased production efficiency, the GDR agricultural workers' productivity in 1977 stood at the level which had been achieved in the FRG as early as 1967." (Professor Merkel)

The enormous cost of the SED agricultural policy is seldom mentioned in the GDR. During visits, when the best enterprises with outstanding managers are shown, one learns approximately how much had to be invested just to make it possible at all to use industrial production methods. Substantiated subsidies for measures to encourage production and for means of production, have increased from 2.4 billion marks in 1974 to 7 billion in 1978. As for the cost which large enterprises have to pay for the additional transportation of workers, material and motor fuel, it can only be guessed at. Although GDR agriculture has absorbed more than 13 percent of all investments made in the GDR since 1960, its share of the labor force (approximately 11 percent of all employed and a contribution of 10 percent to the gross national product [Sozialprodukt]) is disproportionately high. In socialist countries: "In case of doubt, large is better than small, small always smacks of past petite bourgeoisie." This applies to the size of enterprises, the power rating of tractors or the dimensions of machines. The longer socialism has been there--and this is most impressively evidenced by conversations in the Soviet Union--the more atrophied the idea and the knowledge that small-and medium-scale enterprises, in agriculture as well as in other sectors, not only can achieve outputs comparable to those of large enterprises, but can even do better than the latter.

It is possible that, in the course of years, large GDR agricultural enterprises will gradually become better able to deal with the problems created by the SED agricultural policy; for the ironically pointed remark that socialism is a system which creates problems which would not exist without socialism is especially valid in the case of the GDR agricultural policy. This is best exemplified by the much-praised production cooperation. The new production cooperation councils, especially created for this purpose, must restore within the enterprise the unity of plant and animal production which was previously destroyed.

## Soil Fertility Slowly Destroyed

"Proliferating" was the recent answer given in a fit of candor by a cooperative manager to the question of how production cooperation was really doing. "In principle," of course, everything is going "as planned." In production cooperation circles, questions of immediate importance are discussed, for instance the regular supplying of stalls with feed, when the question of computation and payment according to quality raises great difficulties; or the question to be debated is how animal production cooperatives are to dispose of the huge amounts of liquid manure they produce, how these are to be "spoiled by rain" and accounted for.

One of the weak spots of large enterprises is their susceptibility to the vagaries of the weather. One problem which has been made acute by large enterprises has been recognized recently: the preservation of soil fertility. It is not without reason that a discussion on this theme was organized in the GDR technical press at the beginning of this year, including surprisingly candid letters from readers. "no more damage to the soil" read one heading. One farmer wrote that heavy vehicles will leave tracks on the fertile soil of the plain, which results in a consistently high loss of nutrients: "As a result, new structural damages occur." A brigadier of the Burg LPG asked: "how much more mass and nutrients are we going to waste?" The long-term damages resulting from the often "mechanistic" cultivation of the soil have now been recognized, but it is still doubtful whether the irreparable, and probably irreplaceable loss of "farmer's thought" and "village experience" can ever be made good by an improved socialist "problem consciousness."

Even from party officials, for instance in Mecklenburg, one can learn that agriculture—we should say the SED agricultural policy—is largely contributing to environmental pollution. Fertilizers are applied mostly by special planes. It is quite impressive to see the small yellow Hummel planes land on a meadow, to be loaded immediately and fly again for another round. But they cannot possibly be so accurate that the beautiful Mecklenburg lakes do not suffer considerably from the dust they are spraying.

Within 30, almost 35 years, from Saxony and Thuringia to Mecklenburg, a generation has grown up in the country, who knows the agricultural history of Germany only through the distorted representations of the party's propaganda. Their forefathers were either servants of the Junkers and landed proprietors, or they were just slaving as farmers. Propaganda pictures show a small farmer walking in the furrow behind his horse-and-plow; next, and opposed to him, modern technique with powerful machines, technically qualified cooperative farmers whose understanding of "planning and management" steadily increases. The farmer, who had also made his mark on the agrarian structure of what is now the GDR—landed proprietors were of course not the only class—has long become a historical figure in the GDR, who only once in a great while is remembered

in a courageous letter from a reader. To the young generation, the horrors of forced collectivization and the party's terror in the villages have also become history which hardly touches them any more, if they know about it at all.

In the villages, many things have improved too. People can now plan on a fixed vacation; the sociopolitical measures providing long leaves of absence for young expectant mothers also apply in the country. Construction of one-family homes is increasing; a lot has also been done to take care of the cultural needs of villages and schools. But the everyday life of cooperative farmers is pretty much the same as that of a farm worker on an estate. True, the oft-quoted and praised cooperative democracy does not exist only on paper. Here and there, private life is developing, although, ideologically, it is certainly controlled by the party's secretary and economically set in the plan. There remains a modest residue of private economic organization potential which consists mainly in filling in the gaps created by planned economy.

#### Superiority of Large Socialist Enterprises Not Demonstrated

The large cooperatives--already overstaffed compared to the West--experience difficulties in finding worthwhile occupations for their members during the winter. Often, they must work in shops on machines they do not like, which involves long and costly transportation. In summer, it is the contrary; as in all socialist states, schoolchildren and students are mobilized for the harvest. Of course, all this can be "planned" general-staff like, and its execution praised as the result of socialist "planning"; from an agroeconomical point of view, nothing is gained by it, on the contrary. As in industry, indifference and a could-not-care-less attitude are widespread in the cooperatives: whether well or poorly ploughed, whether the machine gets broken, with or without a flag. Only in the worst instances, when animal losses, piglets or calves, become too numerous, are there public reprimands.

It goes without saying that the GDR has enterprises with outstanding managers, competent agronomists and economists, men and women who know how to motivate the members of their cooperatives and can show outstanding production figures. Nevertheless, large socialist enterprises have not yet succeeded in achieving outputs which would demonstrate their superiority. It is also doubtful whether large communist cooperatives are giving rise to the "new man," the cooperative farmer thinking and working the socialist way, who cultivates and preserves the land as his forefathers have done for centuries.

9294

CSO: 2300



GERMAN DEMOCRATIC REPUBLIC

BRIEFS

**NEW REGULATION ON COMBINES**--Berlin (ADN)--The GDR Council of Ministers passed a "regulation on the state combines, combines and state enterprises" which is published in the GDR Legal GAZETTE Part I, No 38 of Tuesday, 13 November. The regulation deals with the responsibility, position and tasks of the state combines and combines as well as other state enterprises in view of the higher demands put on management and planning in the national economy. Hereby uniform and clear stipulations have been created, especially as regards the work of the state combines in their capacity as fundamental economic unit of material production and modern form of management and organization in industry and building construction as well as in other fields of the national economy. [Text] [AU151143 East Berlin NEUES DEUTSCHLAND in German 13 Nov 79 p 6 AU]

**RURAL EXODUS OF YOUTH**--Increasing numbers of young people in the GDR are leaving the villages and moving to the cities. This rural exodus, according to an East Berlin television report, has already led to an acute shortage of manpower in GDR agriculture. Since 1950 the number of persons employed in GDR agriculture has dropped from 2 million to about 800,000. According to GDR television, the reasons why more and more young people are moving from the country to the city vary and include heavy physical labor involved in farming as well as better living conditions in the cities. Although relatively few young people in the cities show any inclination to pursue agricultural vocations, in some agricultural enterprises every other apprentice is from the city. Nevertheless, many apprenticeships in the agricultural sector remain vacant; in some areas, there is a vacancy rate of up to 50 percent and over. [Excerpts] [Bonn IWE-TAGESDIENST in German No 177, 22 Nov 79 p 1]

CSO: 2300

# HUNGARIAN-DUTCH ECONOMIC COOPERATION DESCRIBED

Budapest FIGYELO in Hungarian No 43, 24 Oct 79 p 7

[Article by I.G.: "Hungarian-Dutch Goods Turnover: Increasing Trade, Unchanged Structure"]

[Text] Hungarian-Dutch economic cooperation--so it seems--links two countries and economies that are characterized by similar natural endowments in many things--for example, small territory, high population density, a shortage of mineral raw materials, dependence on foreign trade. Divergencies, however, have many times greater significance than similar natural endowments. The Dutch economy, even within the capitalist world, is one of the most developed. Its foreign trade performance is especially worthy of note.

The Netherlands' share in world economic production scarcely exceeds 1 percent; at the same time its share in world foreign trade is more than 4 percent. The value of Dutch exports is today approximately 50 billion dollars--that of imports is similar--the value of its exports is many times greater than that of the other small developed countries--Denmark, Belgium, Switzerland--it surpasses that of Sweden several-fold, and it is not much smaller than that of France, which supplies a substantially greater social product. In the value of per capita foreign trade turnover, the Netherlands is second among the developed countries.

The high level of export capability of the Netherlands is made clear by the fact that it markets the bulk of its exports in the most intensive sphere of international trade. Seventy-three percent of Dutch exports goes to EEC countries, and within these, one-third goes to the FRG. More than 80 percent of foreign trade is concentrated on the developed capitalist countries, a further approximately 10 percent goes to the developing countries. It is also a specific feature of the foreign trade of the Netherlands, of its international economic relations, that compared to the other developed Western European capitalist countries, it hardly takes part at all in East-West trade. The total share of the CEMA countries in the country's foreign trade does not even reach 3 percent.

Hungary and the Netherlands are traditional trading partners; their contractual relationship is more than a half-century old. Their bi-lateral contractual relationship is presently characterized by the fact that in consequence of

stipulations of the EEC the trade agreement concluded for 1971-1975 has not been followed by a new one; obligations deriving from the two countries' membership in GATT guarantee legal continuity. Besides this, the Netherlands and Hungary concluded an agreement for economic, industrial, and technical cooperation, first in 1968, then in 1975, and they formed a mixed commission that reviews the status of economic, industrial, and technical cooperation on a yearly basis.

The share of the Netherlands in our international goods exchange turnover has stabilized at over 1 percent. (Between 1960 and 1978 the extreme values of the share in imports moved between 1 and 1.7, in exports between .9 and 1.4.) In this decade reciprocal goods exchange has developed in surges; the crisis that developed in 1974 put the brakes on the growth of Dutch foreign trade, while in the Hungarian-Dutch relationship it caused a down-turn, a sudden standstill. In the last 2 years the goods exchange has again increased, and to a significant extent: imports by approximately 35 percent, exports by more than 40 percent.

The general and large-scale picture of the goods structure may be misunderstood, because the high proportion of materials and semi-finished products--63-66 percent in imports, 30-32 percent in exports--suggests that the raw material importing partners deliver mainly materials to each other. In reality, reciprocal delivery includes semi-finished products, parts, fittings, semi-finished chemical industry products, and intermediates--for example, rolled goods, semi-finished aluminum products, and synthetic materials. A further long-term component of the export-import goods structure is agriculture and the food industry--with a share in exports of, in general, over 20 percent, and a proportion of around 15 percent in imports. Trade in agricultural products is characteristic, in that the Netherlands delivers for direct consumption, or for further processing and packaging, primarily feed concentrates and seed- and breeding-stock, while Hungary delivers foodstuffs. The connection between the agricultural sectors of the two economies also shows up in the machine deliveries of the Netherlands. The majority of machines, which constitute around 15-20 percent of imports, are agricultural machines and parts, and food industry machines. (Hungarian machine exports are rather symbolic, their share in general being around 2 percent.)

The largest item--in value--of Hungarian exports is industrial consumer goods, whose share is 40-45 percent. The chief items of export are men's and women's clothing articles, furniture, and housing-fixture articles. Bicycles represent machine industry consumption goods in more significant quantity in the Dutch market.

Cooperative agreements between Hungarian and Western European enterprises have for the most part come into existence in the machine industry. Hungarian-Dutch enterprise cooperation diverges from this general picture. The approximately 50 cooperative agreements established to date affect mainly the agricultural sector, and the manufacture of food processing and food industry machinery.

DEVELOPMENT OF CSEPEL PORT FACILITIES DESCRIBED

Budapest KOZLEKEDESI KOZLONY in Hungarian No 38, 23 Sep 79 pp 650-654

[Article by Gyula Marton: "Development of the Port of Csepel"]

[Text] It is common knowledge that the Port of Csepel is our country's largest and best equipped port for general traffic, and that it is operated by the MAHART [Hungarian Shipping, Ltd] within the framework of the MAHART Port Operation Directorate.

The appropriate managers have always treated with circumspection the development of the Port of Csepel over the long range as well as in the framework of short-range operational plans, and with the planned developments they endeavored to satisfy the demands of freight traffic prognosticated by the freight service.

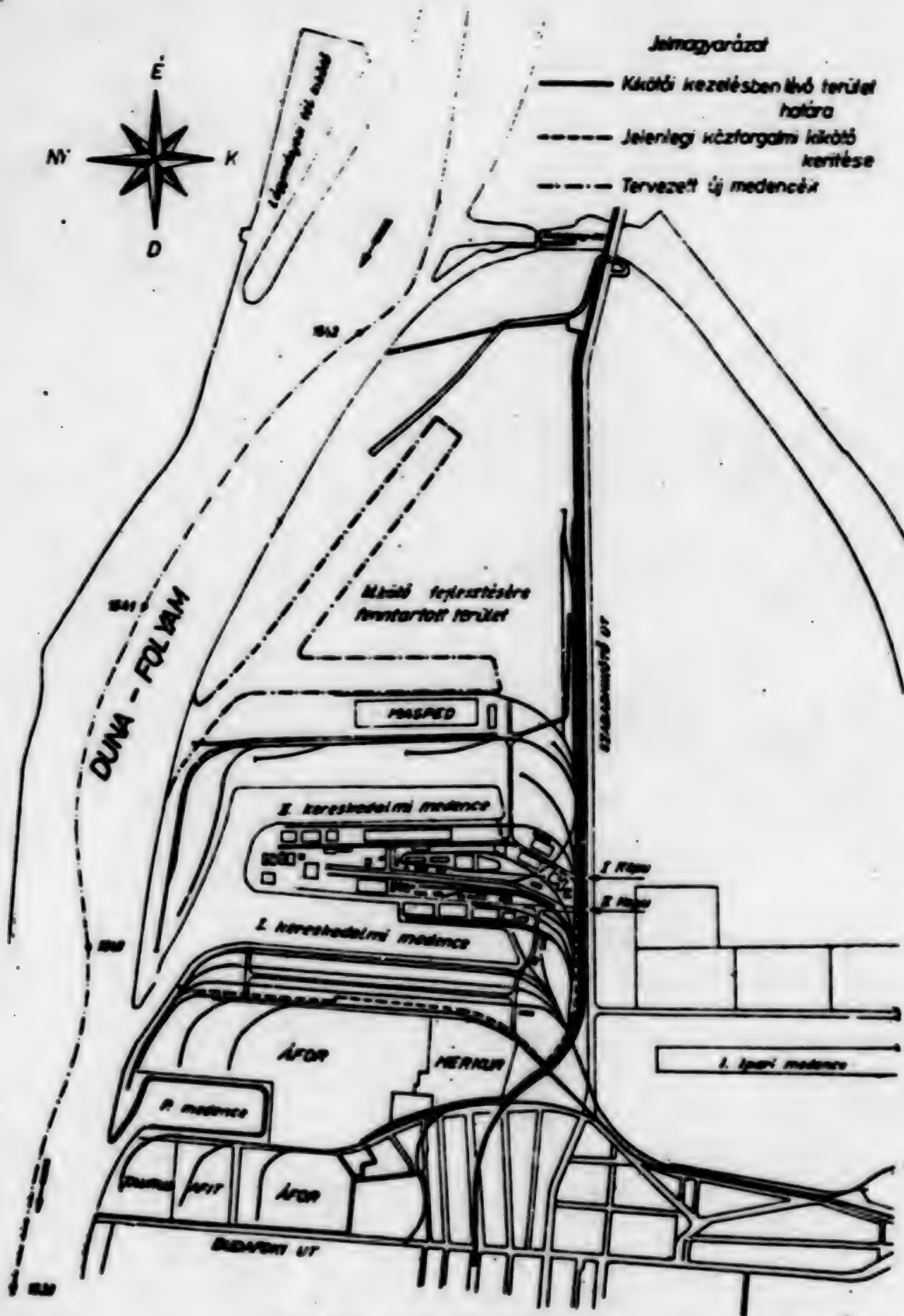
Fortunately the planners of the port, which was placed into operation in 1928, then later also its operators, had the foresight also to stake claims for the area of Csepel Island's tip for the purposes of port development, and by continuously insuring this right they created the possibility for later developing the port's area.

On the site sketch a thick line outlines the 253 hectare area managed by the Port Operating Directorate [Port Authority], of which currently only the inner area enclosed also by the fence is being used by the port for merchandise storage and merchandise loading purposes (on the sketch the fence is indicated by the broken line).

South of this currently used area are located the areas rented by the AFOR, MERKUR, TAURUS, AFIT and FOKA [River Control and Dredging Enterprise] enterprises, the most of which can be considered long-range tenants, therefore they can be left out of consideration from the viewpoint of port development.

Among the enterprises listed, the water traffic of only the FOKA is significant, they unload gravel with their own floating elevator on the rented area, and from this area they supply gravel to a significant portion of the construction projects in southern Pest.





1. m. ábra. A Csépeti Kikötő helyszínrajza

Figure 1. depicts well the operating port and the possibilities of developing the area.

[Key to Figure 1.

1. Site sketch of the Port of Csepel
2. Explanation of signs
3. Outline of area under the port's management
4. Fence around the present general transportation port
5. Planned new basins
6. E=North; D=South; NY=West; K=East
7. Winter port of Lagymanyos
8. Danube River
9. Area reserved for port development
10. MASPED Hungarian General Shipping Enterprise
11. Commercial Basin No 1
12. Commercial Basin No 2
13. P (petroleum) Basin
14. AFOR Mineral Oils Commercial Enterprise
15. MERKUR
16. TAURUS Rubber Goods Enterprise
17. AFIT Industrial Trust for Auto Maintenance
18. Budafok Road
19. Industrial Basin No 1
20. Gate No 1
21. Gate No 2
22. Szabadkikoto [Freeport] Road]

The so-called petroleum basin is also located in this southern area. Its traffic of tank barges, its unloading and loading of oil products is insignificant, since for the most part the oil products are transported by pipelines from the refineries to AFOR's Base Depot in Csepel.

In the vicinity of the petroleum basin--because of the circumstances mentioned above--the MAHART is not planning any significant developments, it uses the basin primarily for the fueling of machinery ships and for wintering the oil transport tank barges. In the areas surrounding the basin, the tenant enterprises have carried out and are planning further developments in the future, but these developments will not significantly influence the port's activity.

But it can be determined beyond the foregoing that the operational developments carried out and in progress by the aforementioned tenant enterprises--primarily AFOR and MERKUR--will greatly improve the esthetics of the port's environment.

To a significant extent, the developments thus far completed in the Port of Csepel during the Fifth Five-Year Plan, as well as the ones planned to 1990, are reconstructive (replacement) in character, and were completed or are planned in the internal area which already now serves the port's activity.

Among the developments of reconstructive character the following are the more significant ones:

- replacement of railroad trackage with 48.3 kg/m rails, in the length of 9.5 kilometers;

- reconstruction of about 90 percent of the outdoor and indoor electrical lighting and transmission systems;

- modernization of the port's internal sewer network, separating the sewer system from the storm drainage system, and construction of sewage purification equipment which meets the requirements of the environmental protection authorities;

- increasing the depth of the port's basins by rejuvenative dredging;

- eliminating the present, decentralized and uneconomically operating boiler facilities, construction of a central boiler plant fired by natural gas and remote heating system;

- tearing down the obsolete maintenance shop with unfavorable characteristics and building a modern, new shop to replace it.

Among the loading equipment, the shore cranes are continuously being replaced. Within this framework in 1979 five 3-ton-load-capacity cranes were replaced, and replacement of an additional four portal cranes and two loading bridges is planned for the Sixth and Seventh Five-Year Plans. Placing the latter into operation by 1982 or 1983 is expected and is of outstanding significance to serve the approximately 800 tons per year traffic in steel goods. It is noteworthy that increasing the capacity of cranes from 7 to 12.5 tons will make it possible to move shipments of greater weight than before within the reaching range of these cranes.

MAHART has also made plans for this 15-year time period to replace about 90 percent of the mobile loading machinery (mobile cranes, revolving loading machinery, electric and diesel forklifts) the role of which is increasing in addition to the shore cranes, justified by their wearing out.

Beyond the above listed and necessary reconstructive developments, the increase and qualitative changes of the traffic's needs, as well as social policy, work

protection and fire prevention viewpoints are making it necessary to also build and buy new installations of an expansionary character.

In the interest of creating the possibility for reloading (and storing) the large unit weight steel goods and piece goods which are appearing in an ever-increasing quantity, a portal crane with 16/27.5 ton load capacity, 33/21 m reach, with hook and bucket operation capabilities was placed into operation in 1977 on the so-called open loading area of the Port of Csepel, which is also suitable in its bucket-operational mode for the rapid and efficient transfer of cast bulk goods.

During the Sixth Five-Year Plan it is planned that one more crane of this type will be purchased.

The traffic of steel goods and other bulk goods handled in the open loading area comprises about 50 percent of the traffic in the Port of Csepel. In the interest of meeting these ever-increasing loading and storage demands it is justified to extend the present 240 meter running track of the portal cranes by an additional 285 meters, and also to increase the area which can be served by the cranes. This plan will be implemented by adding two VD-10/A type trestle cranes used in the construction industry, each with 10-ton capacity, and by building 370 meters of new crane tracks for these cranes in 1979-1980.

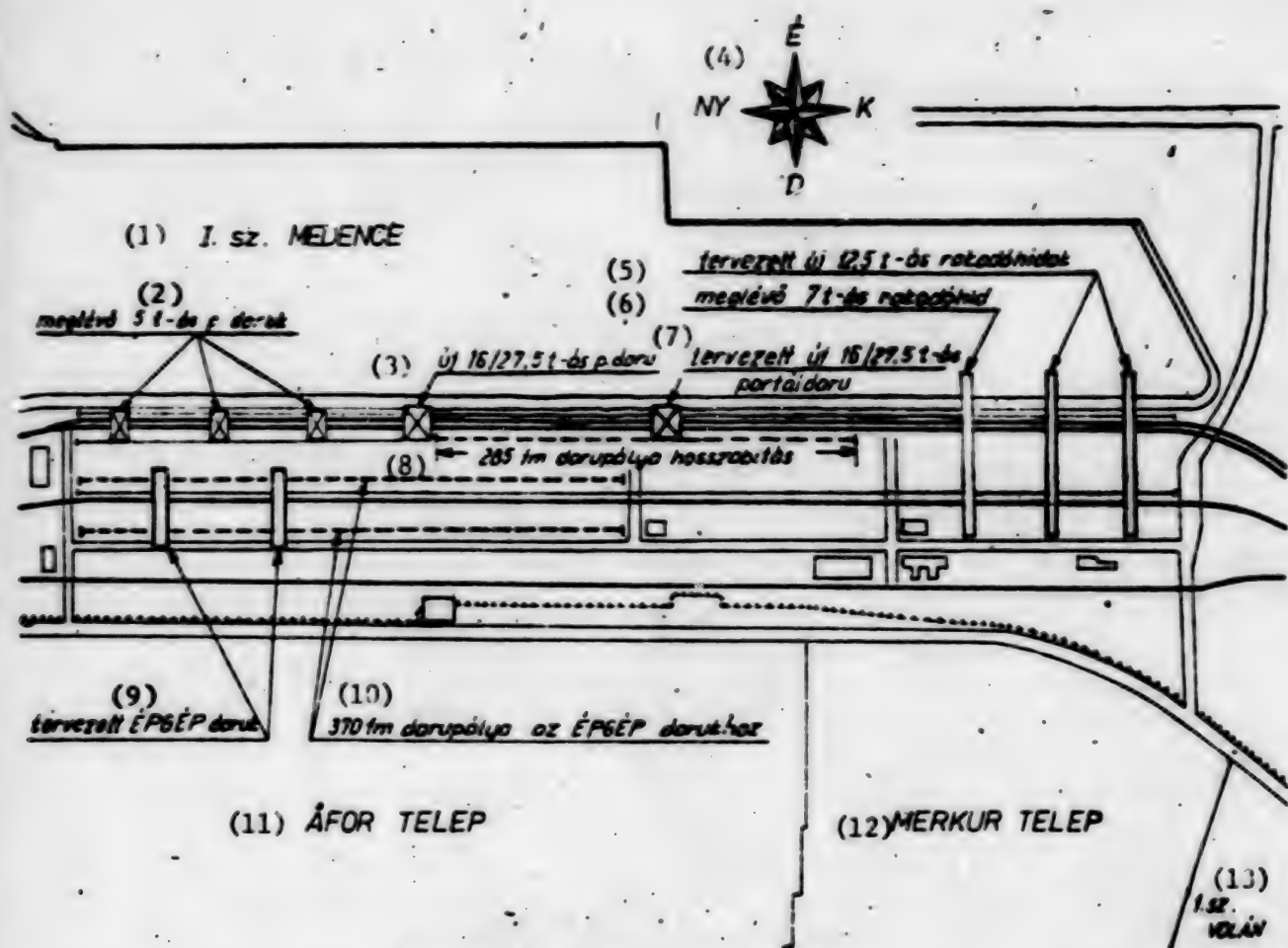
There is a 430x130 meter area available on the northern shore of commercial basin No 2 to develop the new loading area for cast [iron] products. It will be necessary here to create infrastructural installations (deepening the basin, shore walling, railroad trackage, paving, outdoor lighting, water drainage, service building, etc) and to locate some loading equipment here. Because of the quite high cost requirements it seems to be more realistic to use the area with simply constructed loading pontoons, conveyor belts and mobile loading machinery.

Besides the above possibilities, it promises a more practical solution over the long range to locate the new bulk-product reloading area next to the planned No 3 and No 4 commercial basins (the sketch of Figure 1 shows the location of the planned basins).

Based on surveys and calculations, the idea seems realistic that the sum of money derived from selling the gravel material which will be produced from the sites of the new basins to be developed, should cover the development costs of the basins; it is thought that this work can begin in 1980 and be completed during the course of the Sixth Five-Year Plan.

In addition, development of the new basins will make it possible to concentrate the floating equipment which winters in Budapest, and will insure favorable opportunities for locating other enterprises here, as well as handling the traffic which is expected to increase after the Danube-Maine-Rhine canal opens to traffic.





1a. 4. sz. ábra. A nyílt rakodó fejlesztése

[Key to Figure 4.

1a. (Figure 4. Development of the open loading area.)

1. Basin No 1
2. Existing 5-ton p. [portal] cranes
3. New 16/27.5 ton p. [portal] crane
4. E=North; D=South; NY=West; K=East
5. Planned new 12.5-ton loading bridges
6. Existing 7-ton loading bridge
7. Planned new 16/27.5-ton portal crane
8. 285 running meters length of crane track extension
9. Planned EPGEÉP (Construction Industry Machinery Enterprise) cranes
10. 370 meter crane trackage for the EPGEÉP cranes
11. ÁFOR depot
12. MERKUR depot
13. [Depot of] VOLÁN's (Automotive Transport Enterprise) Department No 1]

Unloading the granulated bulk urea which began arriving here in covered railroad cars in the beginning of 1977, weighing it, packaging it into sacks, temporarily storing it and loading it into railroad cars or ships has become a new task.

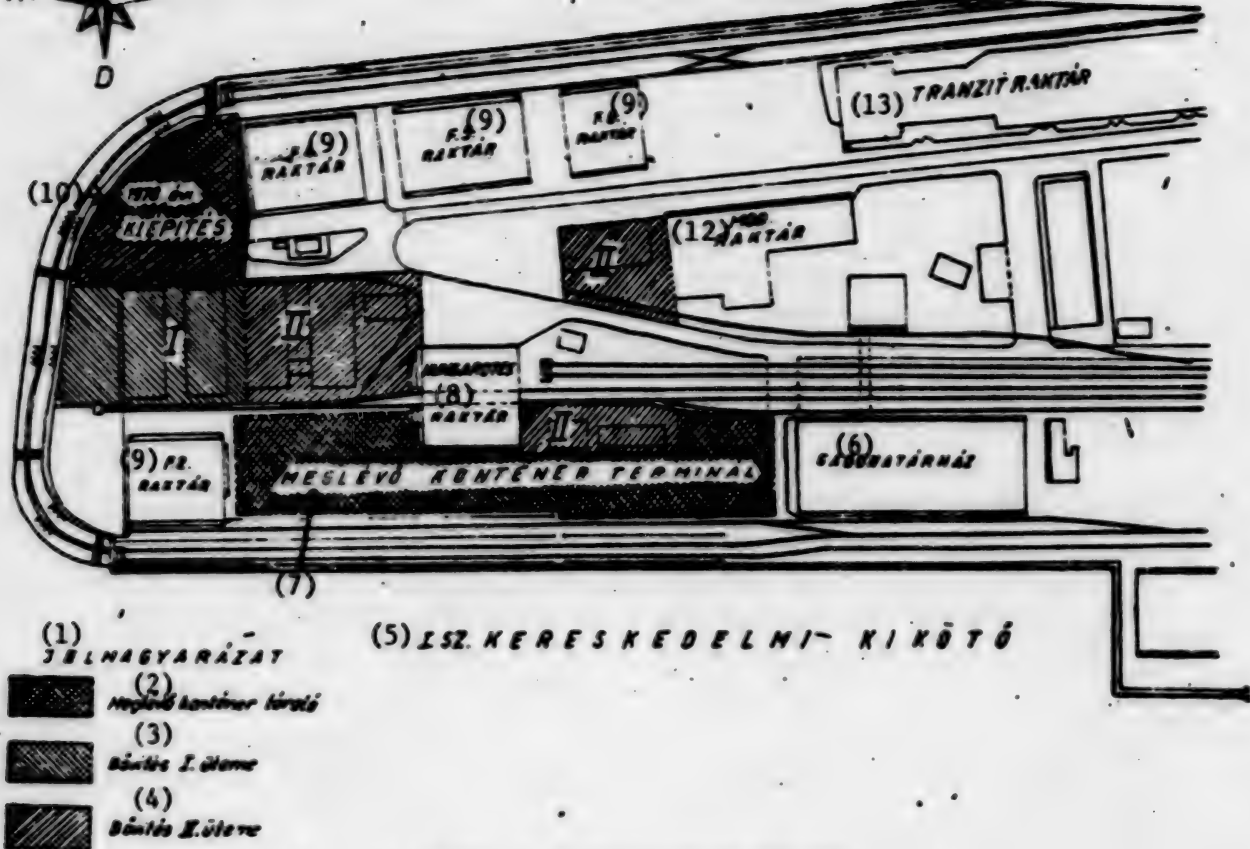
The CHEMOLIMPEX [Export-Import Enterprise for Chemical Industry Machinery and Equipment] purchased motorized equipment to handle the task (two each of vacuum loaders, automated scales, sacking equipment), the nominal capacity of which is 40 tons per hour.

Unfortunately, due to impurities in the phosphate, its caking when exposed to moisture, high level of dusting and other hindering factors, only about one-third of the nominal capacity of the equipment can be achieved on the average. Therefore, the CHEMOLIMPEX had the VEGYTERV [Chemical Industry Design Bureau] develop a new unloading technology, which is expected to be implemented in 1980. According to this, the urea will be unloaded from the railroad cars by loading machines with buckets, then it will be classified while carried on a conveyor belt system. After removal of the dust and caked pieces, the pure granulate will get into the portioning scales and sacks. It is expected that performance will increase with the new equipment and will process 40 tons per hour; operating reliability of the machinery will improve due to classifying the material, as will the quality of the material in the sacks.

Together with the activity of loading and sacking the urea, the requirement has also come up to store 10,000 tons of sacked urea. For the purpose of meeting this demand, the MAHART in 1977 and 1978 had 10,755 square meters of earthen area in the open loading area covered with cement. At almost the same time, the outdoor lighting system which illuminates the entire area with light sources mounted on 10 steel structured columns, each one 35 meters high, was also completed.

Past and expected future growth of container traffic has also brought demands for development. The original 6,990 square meters of the container terminal's storage area was expanded in 1978 by the construction of an additional 3,546 square meters of cement surfaced area (next to warehouse No F4), which increased the 462 units of storage capacity measured in 20' units to 680 units. However, considering that even the average storage demand is higher than this, and it is particularly much higher at peak times (900 to 1,000 units of 20'), therefore according to the development plans already completed, expansion of the container terminal is planned. As the first stage, by 3,150 square meters on the area to be made available by razing the warehouses designated U1 and U2, since they have become worn out, then later by an additional 5,800 square meters after tearing down the warehouses designated U3, U4 and U5 and the buildings adjacent to the terminal building. After development is completed, the terminal's capacity will be 1,300 units of 20' each.

Due to some changes, the numerical data concerning the terminal's development differ from the earlier plans. It compulsively justifies the terminal's development that under the present circumstances some containers have to be stored in remote, undeveloped areas, and the additional internal transport cost for 500 to 1,500 meters in those cases unfavorably affects the overhead.



1a . 3. sz. ábr. A konténerterminál fejlesztése

Key to Figure 5.

1a [Figure 5. Development of the Container Terminal

1. Explanation of symbols
2. Existing container storage
3. Stage 1 of the expansion
4. Stage 2 of the expansion
5. Commercial Port No 1
6. Grain storage facility
7. Existing container terminal
8. HUNGAROTEX [Foreign Trade Enterprise for Textile Goods] warehouse
9. Warehouses No F2, F4, F5, F6
10. 1978 development
11. E=North; K=East; D=South; NY=West
12. MOD Warehouse
13. Transit warehouse
14. Commercial Port No 2]

In 1976 an additional LANCER 2500-type loading-transporting machine was purchased for moving the containers within the port, after which the opportunity opened up to overhaul the machine purchased earlier; at this time there are two machines available to take care of this task.

Unfortunately--for reasons beyond the enterprise's authority--there is no unanimous position and decision concerning service to the container terminal by public roads, nor concerning the providing of the necessary transportation equipment. At the present time, the MAHART Port Operating Authority takes care of transporting the containers out of and into the port with its own transport equipment, but in the enterprise's opinion this activity in the future should be taken over by the VOLAN enterprise since it is within the latter's profile.

Simultaneously with the container traffic the MAHART will also continuously develop, in accordance with the growth of demand, a necessarily well-developed container repair activity which also provides good economic results.

In accordance with the development plans, the container testing equipment was placed into operation in 1977, full use of which will also be insured by the periodic rigidity tests compulsorily prescribed within the framework of the international CSC agreement which is expected to have gone into effect [sic], in addition to the tests following repairs.

In 1978 an area of 1,150 sq. meters was paved in front of the container repair shop, and it is expected that by the end of 1979 (possibly in the first half of 1980) expansion of the repair shop by an area of 18x18 meters will also be completed. Parallel with increasing the area and the number of people employed, the various machinery and working tools used for container repairs are also being gradually improved.

It can be determined with satisfaction and appreciation that besides the investments of productive character the MAHART's leadership is also extending great care to develop the Port of Csepel's social, cultural and health care facilities. During the Fifth Five-Year Plan four new warming shelters were built, and refrigerators and some new furniture were purchased for the warming shelters. The new social facility has been completed with the investment of nearly 60 million forints (detailed data about this are contained in VIZIKOZLEKEDES No 4, 1978), the beginning of the operation of which greatly contributed to higher levels of cultural and social care not only of the Port of Csepel but of all workers affected by shipping.

In 1980 (possibly stretching out into 1981) it is expected that reconstruction of the old workers' residence building will be completed, within which a modern hotel for workers, medical and dental offices, as well as a club for retired personnel will be located. With its completion, the number of available spaces in the port's hotel for workers will increase from 100 to 138.

Due to the lack of earlier opportunities it is expected that construction of a new centrally located bath house and locker facilities for men may take place



within the framework of the Seventh Five-Year Plan, since the present building—because the building's structure has become worn out to a large extent, and is in obsolete condition, and also because of the overcrowdedness—does not meet the requirements.

The sports facility of the Port of Csepel, which earlier had a soccer field and a handball court, provides favorable sporting opportunities for the shipping workers (and in part also to the workers of other plants in the area).

This establishment was expanded in 1977, with financial aid from the OTH [National Planning Office] and with the enthusiastic social effort of the port's workers, by one asphalt-paved handball court, and in 1979 by a two-lane bowling alley and two slag-surfaced tennis courts.

Within the framework of this article no attention was paid to economic justifications of the port's development based on traffic analysis; the appropriate organs are required to prepare these in all cases of investments of productive character. It must also be mentioned that as far as the investments proposed to be completed by 1990 are concerned, the traffic situations and financial possibilities of the times may also result in significant changes.

In spite of these, it can be assumed that this article provides an adequate review of the developments which have already been completed and are in progress in the Port of Csepel during the Fifth Five-Year Plan as well as the ones which can be expected until 1990, and the goals in this direction.

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CSO: 2500

## FINANCING OF ECONOMIC DEVELOPMENT ANALYZED

Warsaw FINANSE in Polish No 7-8, Jul-Aug 79 pp 1-29

[Article by Henryk Kisiel: "Thirty-five Years of Financing the Economic Development of Poland"]

[Excerpt] Period of Accelerated Development (1971-1980)

In the first years in the period under discussion the entire financial system was subordinate to the needs of accelerating social and economic development, which became an important task after its weakness, especially at the end of the 1960's. The following matters merit particular emphasis in the undertakings of financial policy during the years under discussion: effects resulting from the rising price trend in foreign markets were considered in the formation of foreign exchange, and the area of implementation of foreign credits to accelerate the development of the economy and of consumption was considerably expanded. Among other things the significantly faster rate of growth of the distributed national income (mean 12 percent annually) than the produced national income (mean 9.8 percent annually) illustrates the scale of this phenomenon in 1971-1975. Foreign credits made it possible to attain a higher rate of growth of investments made to modernize technology and production, and in part a greater increase in consumption, than the increased growth rate of the produced national income during this period would have permitted.

The opportunities of enterprises to act were considerably expanded in the formation of the economic conditions under which they functioned (especially industrial enterprises), thanks to a greater portion of financial accumulation remaining at their disposition. This is reflected, among other things, in a reduction in the share of income from the budget in the financial accumulation of enterprises from 86.5 percent in 1970 to 78.4 percent in 1974. This means an increase in the amount remaining at the discretion of enterprises from approximately 50.3 billion zlotys in 1970 to 119 billion zlotys in 1974 and more than 122 billion zlotys in 1975, despite the increase of the share of the budget in accumulation to 80.7 percent in that year. In this way a financial base

was created for individual solution of many problems in the development of production. Achievements as a result of increasing the funds left at the disposition of the enterprises were dependent to a large degree on the solutions adopted regarding systems in the enterprises and associations of the socialized economy.

An essential role was played in the formation of economic conditions for the development of agriculture by:

Successive rises in procurement prices, increasing the profitability of agricultural production necessary to stimulate its accelerated development;

An increase in budgetary expenditures for the maintenance and development of agricultural service centers;

An increase in expenditures from the budget on the bases of an expansion of surcharges for bank credit activity for the purpose of assuring individual farmers of a possibility of using low-interest bank credits and partial amortization of credits contracted for especially supported production investments; and

Wider use of the system of tax allowances to support the development of agricultural production on individual peasant farms and specialized production teams (the share of these farms fell from 10.2 percent of their incomes from agricultural production in 1970 to 6.2 percent in 1975). This was accompanied by the annulment in 1972 of compulsory supplies and the inclusion of liabilities on this basis in the amount of ground tax, and a limitation on the progress of this tax in the scale necessary to limit the process of fragmentation of peasant farms and incentive for the development of medium-sized farms which make much more effective use of machinery, tools and manpower to develop marketable products.

The measures presented, aimed at assuring beneficial conditions for the development of agriculture, played an essential role in both the first and the second halves of the 1971-1980 decade. The total amount of surcharges from the state budget for the food economy increased from approximately 50.2 billion zlotys in 1970 to approximately 167.8 billion zlotys in 1975, and to over 287 billion zlotys in the plan for 1979. Financing the needs of agricultural development became one of the most dynamically growing items in budgetary expenditures. Their share in the entire expenditures of the budget increased from 15 percent in 1970 to 24 percent in 1975, and to approximately 27 percent in the 1979 plan. The need to collect large amounts of funds to finance the rapidly growing surcharges for the food economy is a characteristic feature of the entire decade under discussion.

The credit policy also occupied an important position in stimulating the development of agricultural production. This was expressed in the increased credits for private agriculture from 23.6 billion zlotys in 1970 to 32.1 billion zlotys in 1975 and to 52.8 billion zlotys in 1978, and by the increase in investment credits for agricultural circles, agricultural associations and producer cooperatives from 0.9 billion zlotys in 1970

to 5.5 billion zlotys in 1975 and 22.0 billion zlotys in 1978. This increased the indebtedness of private farms from approximately 43.2 billion zlotys in 1970 to 67.3 billion zlotys in 1975 and to 98.0 billion zlotys at the end of 1978. The system of credits for private peasant farms became an important factor in stimulating investment activity and in increasing outlays for current production.

In 1971 the number of handicraft shops began to drop, chiefly as a result of limitations on co-production with the socialized economy, and partially as a result of the introduction that year of a one-time rise in the tax burden (by 10 percent for small-scale shops and 15 percent for larger ones). In connection with this a decision had been made as early as 1972 to reduce the tax burdens in order to establish conditions to develop the services of individual craftsmen. They were based mainly on the possibility of rendering services for the people and agriculture and of producing market articles (individually or with the aid of family members) solely on the basis of applying to be a craftsman and payment of suitably differentiated treasury-fee rates, instead of the turnover tax and income tax. This allowance form of taxation covered approximately 53,000 plants.

A special role fell to the wage tax in activity with the aid of taxes on the income of the people. The progression contained in it, despite many corrections, was judged to be a factor limiting labor productivity. In this connection and beginning in 1972, as the regulations were improved, new wages began to be set as net wages, not subject to the burden of the wage tax nor to pension contributions. In order to compensate the budget for the wage tax removed, a tax from the wage fund was introduced as a tax debiting the costs of the enterprises. Additional tasks of this tax were to increase the costs of employing manpower and persuading enterprises to be thrifty with it.

In the formation of budget income and expenditures an important place was held by the collection of funds necessary to accelerate the development of science, social consumption and social security, along with the purpose of collecting suitable funds for the surcharges already mentioned for production where retail prices did not cover manufacturing costs.

The current budget expenditures needed to develop science increased from 3.0 billion zlotys in 1970 to 13.8 billion zlotys in 1975 and to 16.4 billion zlotys in the 1979 plan, and altogether with the assets collected for funds from 12.1 billion zlotys in 1970 to 31.4 billion zlotys in 1975 and to 40.5 billion zlotys in the 1979 plan. The mean annual growth rate, computed in current prices, came to over 14 percent. In this way a rapid increase in the financial funds necessary for a considerable increase in the role of science in establishing the economic development of the country was assured.

Current expenditures from the budget for social and cultural services increased from approximately 63 billion zlotys in 1970 to over 111 billion zlotys in 1975 and to 163 billion zlotys in the 1979 plan. Thus their



mean annual growth rate exceeded 11 percent (in current prices). Such a considerable increase in these expenditures was mainly associated with the expansion of the social and cultural service network and with an increase in the wages of the people employed in it, along with the inclusion of agricultural people in free medical care from 1972 on.

Expenditures for social security, financed from the budget and from the social security funds, increased from 49 billion zlotys in 1970 to 95 zlotys in 1975 and to approximately 167 billion zlotys in the 1979 plan. Thus their mean annual growth rate amounts to 14.6 percent. This is necessary to finance the broad program of developing social security, in which an important spot is occupied by a systematic, planned rise in annuities and pensions, an expansion of services for veterans, assurance of payment of sick benefits to all working people at a level close to their wages for sickness, and an increase in aid for mothers taking care of children, for families with many children and those raising crippled children, and the inclusion of people in the country in the pension insurance system.

An important role in accelerating the development of the economy was played by the policy of activating savings deposits, reducing stress in the market situation. The spread of savings banks and the introduction of new and attractive forms of saving promoted the strong activation of savings deposits among the people, along with the policy of stabilizing the retail prices of basic food articles in 1971-1975. As a result there was a great increase in the extent of accumulating financial resources in banks and among the people (from 2.4 percent in 1970 to 8.2 percent in 1973 and to 7.0 percent in 1975). There was a steady increase in savings contributions (from 3,600 zlotys per inhabitant in 1970 to 9,000 zlotys in 1975 and to 11,800 zlotys at the end of 1978), and the amount of accumulated savings which amounted to 15.7 percent of the produced national income in 1970 expanded to 22.8 percent in 1975 and to 21.8 percent in 1978. The significant increase in savings made it possible to reduce the increase in supplies in goods and services to supply the market to a relatively lower rate than would have resulted from the increase in the financial income of the people.

The 1970's saw an increase in sales of foreign-exchange currencies to the people for tourist purposes, treated as one of the elements in improving the living conditions of the people. As early as 1971 the standards for allotment of foreign-exchange currencies had been considerably expanded (to the value of 7,000 zlotys annually for individual trips to socialist countries, and to \$100 once every 3 years to capitalist countries). In later years these allotments were modified many times in accord with the current possibilities of meeting the balance of payments. In this way the people were provided with an opportunity to develop foreign tourism on a wider scale. Some of the receipts from this enhance the development of national tourism through tourist and recreation funds. Tourist excursions from Poland to other countries increased from over 0.6 million people in 1970 to 2.5 million people in 1975 (not counting trips to the German Democratic Republic

made by 5.7 million people) and to 2.8 million people in 1978 (not counting trips to the Germany Democratic Republic).

Changes in the system of financing the economy, aiming at acceleration of the development of the economy and an increase in consumption, held an important place in the major undertakings presented by the finance policy, which had the same purpose. The new economic and financial system, introduced at the beginning of 1971-1980 should be mentioned first of all. Its task was to increase the activity of the enterprises in the socialized economy for more complete implementation of the possibilities of accelerating an increase in production. For this purpose the new system limited the area of application of directly controlled funds in favor of indirectly controlled funds with the aid of such economic and financial instruments as price, interest rates, taxes, profits and standards for the creation of various types of economic organization funds.

The formation of the so-called discretionary wage fund as a function of the increase in added value production [excluding material services] became a basic mechanism in the operation of the new economic system. This was intended to encourage intensification of products sold with as little consumption of materials as possible, as little increase in reserves as possible and with a great an increase in labor productivity as possible.

A second and complementary measure of evaluation in the new system became net profit, or that portion of the financial accumulation which remained for the actual use of economic organizations after all payments to the budget and credit system had been made. The magnitude of this profit was associated with bonuses for management personnel and deductions for the development fund, used to finance the actual developmental needs of economic organizations within the framework of financing this development for themselves. However, an increase in the opportunities of self-financing is directly associated with the size of the wage fund, which makes it possible to reduce the share of bank credit (revolving and investment) in financing developmental needs, and thus to reduce the share of added value production [excluding material services] by paying installments of bank credit with bank interest. In this way connecting management bonuses with net profit is additional encouragement to better use of the labor force and fixed assets for the purpose of increasing the value of sales. The strong motivation of the standards for deductions for the discretionary wage fund, the management bonus fund and the development fund had to be enhanced by establishing these standards for multiyear periods.

In the economic and financial system outlined it was assumed that elements of direct economic management could be perfected to establish major investment enterprises, the amount of production of basic raw materials and other materials, and import opportunities. Accomplishment of the export tasks found support in the shape of forms of deductions differentiated by branch for the foreign-currency funds, most often

justified by the amount of export increase. In this way foreign-exchange funds were placed at the disposition of enterprises and unions for the needs of further export development through complementary purchases of machinery, equipment, materials, licenses and so on.

The entire system of bank credit functioning and the system of account settlements of enterprises with the budget were subordinated to this economic and financial system, presented in a very sketchy way.

In accord with the requirements of the new economic and financial system, principles of revolving fund credits were set up. Basic credit was introduced to finance current and unusual reserves and accounts receivable from clients, the interest on which is more and more subordinated to the effect of reducing reserves and collecting accounts receivable from clients. Seasonal and backup reserves are financed by lower-interest bank credit.

In forming the principles of account settlements of enterprises with the budget the assumption was made that they should constitute an important element affecting the conditions of operation of economic units, and particularly units using the principles of the new economic and financial system.

In this connection limits were placed on the previous principle, dominant in the tax system, of "taxing the effects of production" (turnover tax, payments from profits, tax on the enterprise fund) in favor of "taxing the factors of production" (interest on fixed assets and the funds financing the fixed assets and wage fund share). This was intended to promote greater interest in more effective use of the factors of production. From this point of view an important function was attributed to liabilities increasing the costs of direct labor for the purpose of including in it the full social costs of reproduction of the labor force and the creation of intense interest in rendering employment effective.

Beginning in 1973 there was implementation of the principle of self-repayment of investment credits in financing the investments of economic organizations. Among other things, in order to strengthen the possibilities of bank control in this sector on the basis of an analysis of investment effectiveness, we liquidated the credit system functioning in 1971-1972 for budgetary unit investments, needlessly weighing down the bank apparatus with formal control of financing these investments. In addition the possibility was introduced of making substitution between repairs and investments in the sphere of investment and repair fund assets. The investments of units using the new economic and financial system were divided into: 1) investments on credit including production investments of a developmental nature; credit for these purposes is paid from amortization and profits, presenting the bank with a need to probe the evaluation of effectiveness of these investments, and set up possibilities for self-repayment and define the period for this; 2) fund investments made within the limits of accumulated enterprise funds, including minor production investments and social investments exclusive of bank control; and 3) investments subsidized by the budget, including known-production investments.



The interest on the investment credits was used for the needs of affecting their instrumentality in the formation of added value production [excluding material services] and profitability. This was expressed in raising the interest on investment credits from 3 percent in 1973 to 8 percent in 1974 and, among other things, encumbering the operational costs of the enterprise investors, in order to bring pressure to bear on the fastest possible implementation of investments and effective use of newly acquired fixed assets. Remittances from amortization acquired from installations turned over to use, complemented in case of need by remittances from the enterprise-investor profits, were anticipated for the repayment of investment credits.

Essential changes were also introduced in the actual structure of the basic source of the state budget income, that is, the turnover tax. The differential tax form was abandoned and taxation according to percentage rates determined on principles for broader and less-defined groups was introduced. This not only meant considerable simplification in the tax system (a great restriction in the number of rates), but also an expansion of benefits for enterprises manufacturing at lower costs.

Progressive taxation of the development fund was implemented for the purpose of counteracting the tendency to invest, excessive from the standpoint of economic possibility.

The assumptions of the new economic and financial system, presented with considerable simplification, were modified in 1974-1977 in accord with the requirements levied by the evolution of the economic situation. This particularly concerned the increased tension in the economic equilibrium caused by rather poor harvests in 1974-1977, the delay in putting new installations to use, and the worsening of the economic situation in foreign markets, based on price rises and increased export difficulties occasioned by the recession and growing tendencies toward protectionism in the highly developed capitalist countries.

In particular it turned out that the system of account settlements for foreign turnovers permitted many enterprises to realize additional receipts from sales on the basis of an increase in the prices of exported articles, but considerably retarded them because of the need to make correspondingly greater expenditures on the basis of the increase in the prices of imported raw materials and other materials. In many cases this made it possible for enterprises to accumulate considerable financial assets for funds, which added to the increased stresses in the economic equilibrium of the country and weakened the activity of funds as a factor encouraging improvement in management efficiency.

Already in 1974, for the purpose of countering this tendency, the turnover tax on exports was introduced, embracing some of the export profits largely independent of producers and stemming from the



inflationary movement of prices. The principles of taxing so-called "novelty" were also changed for the purpose of limiting the frequently excess benefits of producers achieved as a result of their high price level. Improvements were also made in the principles leading to comparability of added value production [excluding material services] in the base year and the settlement year, since the growth in production determines the scale of discretionary increase in the wage fund. The principle was accepted that correction does not only include the results of organizational and methodological changes, but also changes in prices, tariffs and taxes. In addition a number of changes in the principles regulating the pay funds were introduced by applying:

Deductions for ministerial wage fund reserves on the basis of an increase in employment, an increase in the discretionary wage fund above 4 percent and exceeding the payment index for the increase in labor productivity (index "O"), which is a form of taxing the discretionary wage fund, and

The index "O", as a basic instrument in regulating the amount of compensation for work, limiting the possibility of spending the wage assets within the framework of the discretionary wage fund.

This succeeded in obstructing to a definite degree the tendency toward an excessively rapid growth of the wage fund, but at the same time weakened its influence on improving management efficiency. This is because, in the formation of the wage fund, the payment index for the increase in labor productivity was applied by the amount of sales evaluated in market prices, which in practice freed the wage fund increase from reductions in material costs.

In this way necessary corrections in the economic and financial system were introduced on an emergency basis to counteract the strains in the equilibrium in the area of excessive wage payments and aimed at introducing investment discipline. Nevertheless the interest of economic organizations in improving management efficiency was somewhat lowered. This is because the incentive activity of principles establishing the discretionary wage fund and the management personnel bonus fund underwent considerable restriction. In addition the management horizons were restricted as a result of the introduction of annual payment indices for the growth in labor productivity and of investment limits, which intensified the tendency to spend all currently available assets. In order to stimulate the interest of enterprises in improving management efficiency, emergency efforts were made in 1978-1979 to produce administrative effects by limiting the consumption of combustible fuel, motor fuels and electrical energy. For the purpose of adapting the economic and financial system to the increased requirements in the area of improving management efficiency, a decision was made to make further modifications in it, necessary to adapt it to the current situation of consolidating its stimulating functions. This was expressed, for example, in adopting the viewpoint that the wage fund is assigned directly to the ministry. On the other hand this should be assigned

to the subordinate economic organizations using the modified economic financial system and adequately tight indices of wage fund formation, restrained within the general limits formed on the basis of the payment index for the increase in labor productivity, but based on the increase in added value production [excluding material services] or, in the case of the management bonus fund, based on the increase in profit. For the purpose of making it easier for the ministers to adjust the enterprise wage funds to the amount determined for the ministry as a whole, they authorize the discretionary wage fund to be encumbered by benefits in favor of the ministerial reserve and a change to be made in the magnitude of the wage fund assumed in the NPSG [National Socioeconomic Plan] on the basis of above-plan production. Under such assumptions assurance of the stimulating functions of corrections in the wage fund and the compensation fund became mainly dependent on the scale of payment for the increase in labor productivity assumed in the NPSG.

In order to intensify interest in export development, additional deductions for the management bonus fund on the basis of export increases, free of taxes, were anticipated. In economic organizations using the modified system, there was also a guarantee of an opportunity to set up their own foreign-exchange funds to purchase spare parts, machinery, documentation and so on, the amount of which was dependent on export increases.

Another way of intensifying the stimulating functions was anticipated in the modified system with a possibility of enterprises undertaking investments of a modernization nature beyond the usual limits. This refers to short-term investments with a low involvement of structural and repair work, kept within the limits of the assets accumulated for the development fund.

Independently of the changes in the economic and financial system, presented here with considerable simplification, the policy of shaping the parameters of this system to affect the economy of enterprises and associations was also approved. This is because it was ascertained that in 1971-1975 the basic factor in the increased financial accumulation of the enterprises was the increase in the physical magnitude of production and sales. However, the drop in material costs also had quite an effect on the increase in accumulation. In industrial enterprises this amounted to only approximately 4 percent, while the index of the share of material costs in the value of sales was even increased (from 52 percent in 1970 to 53.6 percent in 1975). During this period there was also a slight increase in the productivity of fixed assets in industry (less than an annual mean of 1 percent). Progress in managing reserves was also unsatisfactory, despite an increase in the interest of bank credits made to finance them. All of this indicates that in 1971-1975, a period of very dynamic economic development, changes in the proportions of the economy and so on in the sphere of management efficiency became important problems. The material output and experience of this period require further thorough analysis in order for improvement in economic efficiency to be effectively

influenced by it. This purpose was also the guiding principle for the assumptions of the financial policy for 1976-1980.

During this period the entire financial apparatus was thus directed toward conducting a policy of strengthening the role of finances in the national economy, among other things, by consistent inclusion in the budget of that part of enterprise income which did not result from improvements in management efficiency but were the results of the action of factors independent of the enterprises. One of the methods leading to this goal is the establishment of suitably tight indices, defining the share of the budget in enterprise income, which would stimulate outstanding improvement in management efficiency if management wishes to guarantee for itself greater assets for the wage fund, bonuses and development fund. Implementation of these assumptions made it possible to maintain the share of budget income within the limits of 81 percent of the financial accumulation of enterprises in 1975-1978.

Special allowances in the turnover tax and the tax on the management bonus fund, awarded on the basis of an increase in production with the definite mark of quality, were introduced in 1978 for the purpose of encouraging an improvement in production quality by means of the financial system. In the case of improvement in the quality of production in short supply, not subject to this tax, a suitable increase in subsidies of goods and services was anticipated. The next step forward anticipated for implementation in 1979 is the introduction of sanctions for poor production quality. In addition, for the purpose of increasing the interest of construction enterprises in improving management efficiency, their subsidies for losses have been eliminated and subsidies have been introduced for equalizing the differences between the old, deficit prices and the new prices guaranteeing a possibility of conducting profitable activity, since investors settle accounts according to the old prices.

Work has also advanced in aggregating all of the previous burdens on the basis of taking a real look at direct labor costs. This pertains to the fact that the aggregated burden took into consideration the equivalent of all social benefits and social and cultural services, and made a proper orientation in the social costs of production and the factual effectiveness of export possible.

Essential improvements aimed at improving management efficiency were introduced in 1976 in principles of financing state agricultural enterprises. They were based on the introduction of a single subsidy of a goods and services nature, recognized with respect to the value of net final production and, from 1978 on, with respect to marketable products, instead of the different subsidies which gave an increase in production no incentive (for investment activity and to cover amortization costs). The scale of this subsidy is to make complete self-financing of operation and investment activity possible.



A factor favoring the relaxation of stresses in the balance of payments situation was the introduction in 1970 of complete foreign-exchange currency freedom for natives (Polish citizens) in collecting funds for foreign-exchange currency settlements and free disposition of these funds, among other things for the needs of foreign tourism. This has permitted a further outstanding increase in the condition of the assets accumulated for these settlements (from approximately \$5 million in 1970 to \$125 million in 1975 and \$406 million by the end of 1978).

In conformity with the concept of economic maneuvering, among other things placing limits on the growth of employment in the socialized economy by checking the drop in unemployment in agriculture and by increasing employment in trades, decisions were made to support these assumptions. This was expressed, for example, in the fact that the farm people were included in general pension security and in the fact that further trade improvements were introduced in 1977 for individual service and production activity, in conformity with the needs of the development of services and the growth in supplies of marketable products. There was a very definite easing of the burdens of the income tax, the upper limits of income free from taxation were raised, and the permissible amount of employment of wage-earners, requiring suitable forms of lump taxation, were increased. The reduction in budget income caused by this will have to be compensated for by 1980 through an increase in the number of handicraft plants. However, limited housing and supply possibilities are still a factor limiting the effectiveness of the financial stimulation of the development of handicrafts.

The assumptions of the financial policy for 1976-1980, in all spheres of activity of the financial apparatus, were also subordinate to the needs of improving management efficiency.

In the area of budget economy the following should particularly be mentioned from among the major undertakings aiming at improvement of management efficiency:

Elaboration of standards for expenditures for 1976-1980 wherever it is recognized as possible. This concerns the establishment of a hierarchy of needs requiring satisfaction, especially in the sphere of social and cultural services, communal and housing economy, and some tasks in agricultural service. They also permit better orientation in the scale of satisfying financial needs from the budget.

Generalization of standards for revolving funds in budget units in plants, and their use to verify budget subsidies in cases where major surpluses in material reserves appear. This was an important step in supporting major progress in the material economy.

Stimulation of activity of the ministries coordinating the major divisions of the budget economy (agriculture, communal and residential economy, and sections included in the sphere of social and cultural services), aimed at conducting a thorough professional analysis of the



needs for budgetary funds, particularly within individual voivodships. This was achieved as a result of the introduction of special guidelines by the Presidium of the Government establishing amounts within which financial needs should be satisfied from budgetary funds. This forces the coordinating ministries to deepen their analysis of needs and to adjust funds for their satisfaction to current economic possibilities.

Essential changes were introduced in the principles of financing local budgets in order to adjust them to the conditions of operations in the new administrative division of the country. This is because a rather large number of voivodships of correspondingly lower economic potential required assurance of more stable sources of income and limitations on chance in the formation of so-called budgetary surpluses. The latter determine the possibility of financing the needs of a given region above the level assumed in budgetary fund calculations, resulting from the obligatory standards of budgetary expenditures and the rates used in the calculations. The reason for this is that a random approach to the formation of budgetary surpluses leads to the occurrence of unjustified regional differences in the level of social, cultural and communal services.

To limit this phenomenon, some of the funds from the budgetary surpluses were calculated in 1976 for an expenditure plan intended to be covered by planned income. In this way assurance was developed that definite needs would be properly satisfied, while at the same time the possibility of above-plan development of additional funds for the needs of the national councils was limited.

The arrangement of further fund financing developed in 1976-1980 is also supposed to help improve efficiency in local economy. The general principle was introduced that different types of local funds be set up in principle on the voivodship level, with only one fund (gmina and urban) operating on the basic level and including, among other things, all possible transfers from voivodship funds. This guaranteed the organs on the basic level a better idea of how much funds were assigned to them to carry out their individual tasks.

In summation it can be stated that 1971-1980 saw a qualitative change in the role played by finances in managing the development of the national economy. For the first time dependence of the increase in the wage and bonus fund for management in many enterprises on improvements in management efficiency was introduced on a broad scale. For the first time opportunities were created for a considerable group of large enterprises to make independent decisions with respect to investment outlays and the use of their own production potential, along with assurance of suitable conditions for acting on these decisions with the aid of financial instruments. The system of central planning of basic directions of development by means of guidelines contained in economic plans was strengthened by a set of financial instruments in a range wider than ever before.

The role of finances in influencing improvement in economic efficiency in the budgetary sphere, in accumulating budgetary funds to counteract the trend of rising prices for basic food products and many other market articles, and in forming conditions for the development of agriculture and private handicrafts was considerably greater than ever before.

The entire organization of the banking system was subjected to the increased tasks of the financial policy. In the first stage the Investment Bank was united from 1970 on with the Polish National Bank for the purpose of guaranteeing better control of financing the operational activity of enterprises in association with their investment activity. In the next stage (1975) the range of activity of the Agricultural Bank was expanded to coordinate the financing of the development of the food economy, transforming it into the Bank of Food Economy, with its activity covering the financing of socialized and private farming, and of the agricultural food industry.

In making a general recapitulation of the role of finances in forming the conditions for economic development during these 35 years, it must be emphasized that the effectiveness of the financial and economic system of the units of socialized economy and of various undertakings of the financial policy was primarily dependent on changes in the methods of planning and administration, improvements in the organization of goods turnover, of supply and so on, needed to accompany the former, as can be seen from the experience of past years. The reason for this was that the policy of improving management efficiency had to be carried out in the entire area of the management system and in all of its details. Still, the financial system, the financial policy, was one of the major instruments of activity in this field, with the aid of which the entire economic and social development of the country was actively affected during the past years.

From this point of view the role of the financial system in building the basis of socialism in our country during the last 35 years must be evaluated positively, and the factor decisively affecting this evaluation was the generosity, involvement and thorough civic attitude of all workers in the department of finances.

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## ANTI-IMPORT PRODUCTION PLANS NOTED

Warsaw PRZEGLAD TECHNICZNY-INNOWACJE in Poland No 46, 18 Nov 79 p 37

[Text] The National Technical Organization (NOT) voivodship unit in Poznan treated the issue of the rationalization of imports as a priority task in its present activities, organizing, among others, public engineering surveys in selected plants in the city of Poznan and in the voivodship. Much interesting data was obtained and a number of proposals as collected. For instance, in the H Cegielski Metal Industry Works, of the total number of 780 items, 267 are imported because of customer requests or requirements of the license givers, and 513 items--because of the lack of a domestic producer. As a result of the survey, it is estimated that undertakings, which it will be possible to carry out, will eliminate imports valued at 4,783 thousand negotiable zlotys (367.9 foreign exchange zlotys). It is expected that there will be a decrease in cooperation imports amounting to 3,667 thousands negotiable zlotys in 1980.

The POLMOS Poznan Alcohol Industry Works, in order to rationalize imports, propose undertaking domestic production of cosmetic chalk, improving the quality of domestic self-sealing tape and supplying it with overprint, undertaking the production of caps [or nuts] with lithography, raising the quality of domestic asbesto-cellulose boards, and increasing domestic production of cherry stum. In addition, it is proposed to reclaim the filtration bulk from used filtration panels (imported product) and forward it to the paper plants.

The CENTRA Poznan Electrochemical Works import battery carbon black, crystallized zinc chloride, nickel sulphate, corn starch, epoxy thixotropic resin, methyl polymethacrylate, and also ebonite and polypropylene casings. According to the opinion of the members of the Association of Polish Mechanical Engineers and Technicians (SIMP) plant circle, all these raw materials and products can be produced in Poland. The value of imports, which it will be possible to substitute by domestic means, is estimated at approximately 19 million foreign exchange zlotys annually. In addition, the possibility of importing such raw materials and products as manganese dioxide and nickel woven grids (sita tkane nikowe [sic] from the first payments area countries should be considered.

In the TELKOM-TELEKTRA Wielkopolska Tele-electrical Works a large number of sub-assembly items in the telegraphy and data transmission field were reviewed. It was planned to use domestic substitutional products by 1980, amounting to 5,707 thousand negotiable zlotys (348.97 thousand foreign exchange zlotys in the analyzed fields).

The CHIFA Surgical Instruments Factory in Nowy Tomysl imports 99 percent of the raw materials, other materials, and certain parts of surgical instruments from the capitalist countries. Domestic production could meet the needs of the factory for stainless steel, abrasive powders, and replaceable surgical blades. The anticipated foreign exchange savings would then amount to 319.5 thousand foreign exchange zlotys.

The result of the suggestions presented by the plants is that a considerable restriction of imports is possible under the condition of making comprehensive decisions at all levels. In order to resolve in a practical manner the problems of restricting procurement imports, the NOT voivodship unit will appoint a group of experts comprising specialists for assessing the domestic production potential and also indicating potential producers. The NOT voivodship unit in Poznan will prepare a final report and an assessment of the reviews by 15 January 1980.

CSO: 2600



## PAST, FUTURE INVESTMENT POLICY EXAMINED

Bucharest REVISTA ECONOMICA in Romanian No 34, 24 Aug 79 pp 9-12

[Article by Petre Ghimbulut, assistant director general of the Central Directorate for Statistics: "Investments, Major Factor in the Socioeconomic Development"]

[Text:] In the strategy for socioeconomic development promoted by the Romanian Communist Party, investments have constituted and constitute now, the material support for the continued rapid progress of the national economy. Since 1951 and until 1978, the investments in the national economy have amounted to 1,758.7 billion lei, the greatest part of which (88.4 percent) is being financed from state and enterprise funds (figure 1).

During the first three years of the current five-year plan alone, 517 billion lei were invested in the economy: of these, 467.1 billion lei came from state funds, which amounts to nearly 52 percent of the provisions of the current five-year plan. The investments made during the 1976-1978 period come close to the volume of investments made during the entire previous five-year plan, and represent an increase of 77 percent for the economy as a whole, compared to the first three years (1971-1973) of the previous five-year plan.

Furthermore, the significant volume of investments of 1300-1350 billion lei will be allocated during the 1981-1985 five-year plan; it will be oriented primarily toward the development of productive branches, which will receive about 85 percent of these sums (figure 2). In contrast to preceding stages, the portion of investment funds devoted to the modernization of existing production capabilities will be increased during the 1981-1985 five-year plan; its effect will be an increased economic efficiency and an emphasis on the introduction of technologic progress, thereby assuring a more rapid development of advanced branches. The more efficient use of funds designed for development will be assured throughout these investment activities, by soundly basing new objectives on real needs of the economy, continuing to reduce the proportion of installation-assembly projects, applying improved construction methods, and using light and less expensive materials.

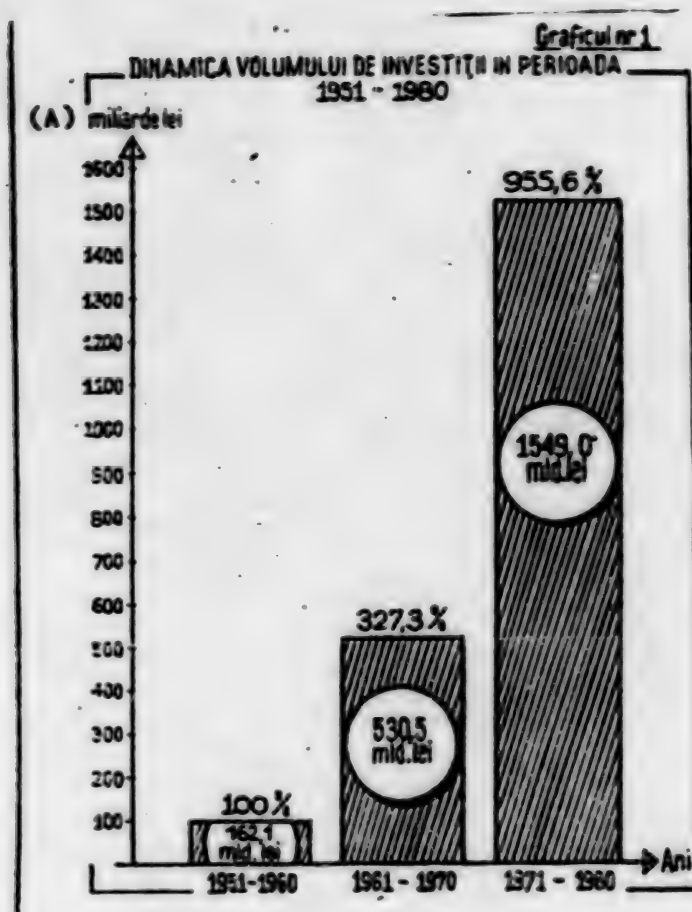


Figure 1. Investment volume during the 1951-1980 period.

Key: (A) Billion lei

A listing of the investments made during past five-year plans shows the special role and the important tasks of the 1966-1980 period in fulfilling the investment program for the economic development of socialist Romania, which has been a determining factor in the creation of the modern Romanian economy (table 1). The vertiginous growth of the volume of investments, the fact that it doubled for nearly every five-year plan, demonstrates not only the constant concern for the unswerving completion of the investment program, but also the growing economic power that the country acquired through the firmness with which this program was accomplished.

#### Development of Production Forces, Rapid Industrialization

The materialization of this vast investment program has resulted in:

A dynamic, extensive development of production forces and of the technico-material basis. By 1980, the fixed assets of the national economy will reach nearly 2000 billion lei, of which more than 70 percent were placed in

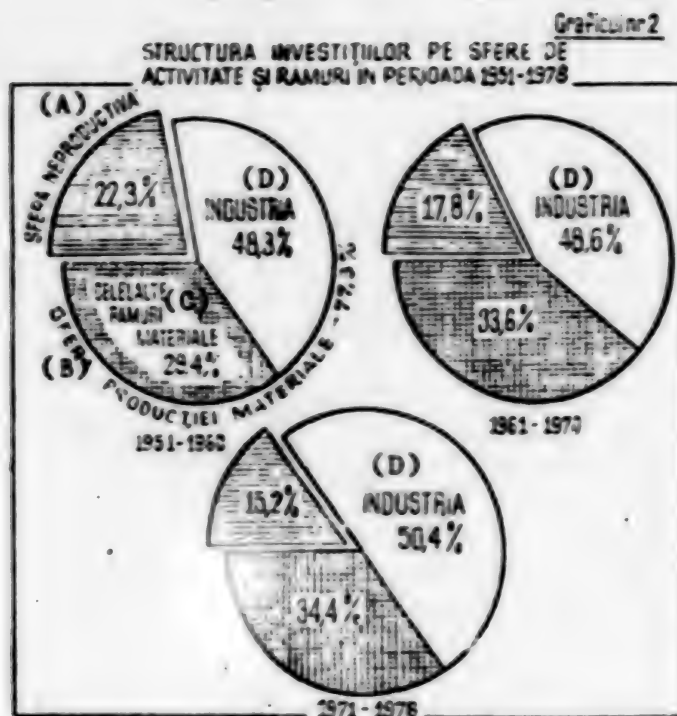


Figure 2. Structure of investments by spheres of activities and branches during the 1951-1978 period.

Key: (A) Non-productive sphere  
 (B) Material production sphere  
 (C) Other material branches  
 (D) Industry

operation during the last decade. While the fixed assets placed in operation between 1951 and 1978 throughout the national economy added up to 1549.4 billion lei, the ones completed between 1966 and 1978 alone amounted to 1235.8 billion lei (80 percent), of which 577.7 billion lei (46.7 percent) in industry, and 183.8 billion lei (14.9 percent) in agriculture. From 1965 to 1978, the economy built and placed in operation 5468 large production capabilities (4764 industrial ones and 704 agricultural and animal raising ones), endowed and equipped with the most technically advanced machinery and instruments known at the time, capabilities which assure high product quality, superior labor productivity, and good economic efficiency;

The modernization of the national economy's structures, and the unswerving completion of socialist industrialization. Starting with the unquestionable truth that the sustained growth of the entire economy and of the standard of living can be assured only by devoting priority to industrial development and modernization, by promoting technologic progress, and by assigning a dynamic and competitive character to this branch, 860.9 billion lei were invested in industry during the 1951-1978 period of time, representing

Table 1 (billion lei)

Tabetul nr. 1

— mod. lei —

Circulaie (A)	Total investiții (B)	(C) Sectorul socialist			Din fondurile populației (G)
		Total (D)	Sector de stat (E)	Sector coopera- tivist (F)	
1931-1935	81,9	37,7	36,8	1,1	4,2
1936-1950	100,2	88,2	84,8	4,2	12,8
1951-1965	188,7	187,7	171,2	16,4	12,8
1966-1970	238,8	214,3	204,1	20,4	16,3
1971-1975	348,8	314,7	308,7	28,0	22,3
1976-1978	517,1	481,5	468,7	21,8	25,4

Key: (A) Five-year plans  
 (B) Total investments  
 (C) Socialist sector  
 (D) Total  
 (E) State sector  
 (F) Cooperative sector  
 (G) From population's funds

Table 2

Allocated investment funds	1951-1965	1966-1978
Industry total	100.0	100.0
Electric and thermal power	12.4	13.3
Fuels	26.8	13.7
Coal	5.0	3.9
Oil	18.9	7.9
Ferrous and non-ferrous metallurgy	15.5	13.3
Chemistry	11.9	15.0
Machine building and metal processing	8.1	20.0
Other industrial branches	25.3	24.7

nearly one half of the entire national investment volume. The facts that industrial fixed assets grew 17-fold during this period, that 43.2 percent of all the national economy's fixed assets were concentrated in this branch in 1978, and that 63.6 percent of the total social product was obtained in this area, demonstrate the high efficiency of industrial activities, and the manifold positive influences of industry on social and economic life.

The distribution of investments among industrial branches shows that the actions taken were intended to assure a comprehensive and efficient structure, in which the predominant development has been focused on branches that provide and process with superior results, the energy and raw material basis needed for a highly efficient, accelerated growth of technical progress, and for peak technologies. As a result, during the entire



1951-1978 period, the fuels industry (coal, petroleum, coke chemistry, methane gas extraction) was allocated 16.3 percent of the total industrial investments, the machine building and metal processing industry 17.6 percent, the chemical industry 14.4 percent, the electric and thermal power industry 13.1 percent, the ferrous and non-ferrous metallurgical industry 13.8 percent, and the other industrial branches together 24.8 percent (table 2). Compared to an average annual growth rate during this period, of 13.6 percent for the industry as a whole, the investments in chemistry have increased by 20.2 percent, those in machine construction and metal processing by 18.6 percent, and those in ferrous metallurgy by 15.5 percent. As part of this general orientation however, the investments during the first period (1951-1965) were allocated primarily to the extraction industry, while during the second period (1966-1978) they were directed toward machine construction, metal processing, and chemistry, branches which promote technologic and scientific progress, derive higher value from raw materials, and encourage higher productivity.

The effect of the investments made in these branches has been that the total product created in industry during 1978 represented 63.6 percent of the country's total social product, as compared to 46.6 percent in 1950, net income 57.9 percent as compared to 44.0 percent, fixed assets 43.2 percent as compared to 19.8 percent, and the employed population 33.5 percent as compared to 12 percent in 1950. Industrial investments have multiple effects: they involve economic aspects -- superior exploitation of material resources, more material goods, improved product quality, higher labor productivity, and more profitable industrial activities, as well as social aspects -- higher incomes, employed manpower, better qualification of the work force, and so on.

Furthermore, during the 1981-1985 five-year plan, industry will enjoy a major development by placing in operation more than 1200 new production facilities and modernizing about 1100 other existing ones, devoting priority to the industrial branches which derive the greatest value from raw materials -- metallurgy, machine construction, and chemistry. During the next five-year plan, the machine building industry will provide 80 percent of the equipment and installations needed to complete the investment program.

Improved territorial distribution of the work force by locating important industrial facilities in less-developed zones, thereby assuring a rapid rate of socioeconomic development in the respective counties and areas. Consequently, while 11 counties had an industrial production of up to 50,000 lei per inhabitant in 1967, significant increases were obtained for this indicator in 1978, as follows: 7-fold for Olt, 3.8-fold for Tulcea, 6.3-fold for Buzau, 5.7-fold for Vilcea, 5-fold for Teleorman, 5-fold for Ialomita, 3.9-fold for Ilfov, 4.7-fold for Vaslui, 3.5-fold for Botosani, 4-fold for Bistrita-Nasaud, and 7.3-fold for Salaj. According to the provisions of the draft for the Directives of the 12th Congress of the RCP, a new, higher stage will be reached during the 1981-1985 five-year plan in achieving a balance among counties, with the principal indicator being the

Table 3

	1951-1965	1966-1978
Total agricultural investments, million lei	60,328	200,152
Yearly average, million lei	4,022	15,396
Investments per 100 ha agricultural land, thousand lei	418	1,338

level of total production per inhabitant. It is expected that in 1985, each county will obtain a total production per inhabitant -- in industry, agriculture, constructions, transportation, services, and other branches -- of at least 70,000 lei, of which a minimum of 50,000 lei will be from industrial production.

#### Constant and Dynamic Modernization of Agriculture

Along with industry, and particularly during the last two five-year plans, agriculture as a basic branch of our national economy, has undergone a constant and dynamic modernization, supported by an investment program whose general orientation has been the multilateral development of production and improvements in its technical and material foundations. The importance assigned to agriculture in the investment policy becomes clear when we observe that of the 260.5 billion lei invested in this branch between 1951 and 1978, 67.8 percent were financed from state funds. As a result of these investments, the fixed assets of agriculture increased 4.3-fold during this time period, while the total product created by this branch increased 3.7-fold; because of this greater endowment and higher degree of mechanization, the number of people employed in agriculture decreased from 74.1 percent in 1950 to 32.5 percent in 1978.

The vast investment program in agriculture (table 3) has been aimed at a development of the machinery and tractor inventory, an expansion of irrigated areas, drainage and erosion control projects, a development of vineyards and orchards, the construction of vegetable greenhouses and hothouses, and the construction of industrial complexes for raising and fattening animals and fowl. To complete the comprehensive picture of the agricultural development program, parallel efforts were made to create and develop plants for building agricultural machinery and tractors, installations for chemical fertilizers, biostimulators, pesticides, and so on, as well as facilities for the industrial exploitation of agricultural products.

By the end of 1978, the agricultural branch had 138,840 tractors (amounting to one tractor per 71 ha of arable land, as compared to one per 684 ha in 1950), 107,573 tractor plows, 15,329 towable combines for stalky plants, 31,740 self-propelled combines for cereals, 13,233 towable combines for fodder, 13,626 chemical fertilizer spreaders, 48,146 mechanical sowers, and so on. At the same date, irrigated areas covered 2,065,000 ha, as compared to only 230,000 ha in 1965. All the large irrigation systems were prepared

and opened after 1965; among these were: Valea Carasu, Pietroiu-Stefan cel Mare, Calauti-Calarasi, Calafat-Bailesti, Insula Mare of Braila, Terasa Braila, Mostitea, Giurgiu-Razmiresti, Sadova-Corabia, Olt-Calmatui, and Cetate-Galicea.

The industrial raising of animals was also initiated during the last two five-year plans, when large complexes for pig raising and fattening were built and put in operation at Poarta Alba, Tomesti, Oltenita, Giurgiu, Ulmeni, Bacau, Palota, Satu Mare, Ceala, Codlea, Fagaras, Tecuci, Orastie, Puchenii Mari, Zimnicele, Macin, and so on; cattle raising and fattening was started at Agigea, Bailesti, Tecuci, Fintinele, Insuratei, Ogradina, Peciu Nou, Varias, Mures, Dumitra, and Gherla; and fowl complexes were begun at such places as Galati, Titu, Arad, Cluj, Piatra Neamt, Tirgu Jiu, Tirgu Mures, Bocsu Constanta, Deva, Baia Mare, Baicoi, and Crevedia.

During the next five-year plan, the agricultural branch will expand and improve its technical and material basis; 113 billion lei have been provided for these investments, equivalent to more than 50 percent of the investments made during the entire 1951-1978 period. An area of .7-1 million ha will be prepared for irrigation, .8-.85 million ha will be drained, soil erosion will be controlled over .95-1 million ha, and the material basis of animal and fowl raising will be expanded. Similarly, agriculture will be endowed with an entire system of machinery to complete the mechanization of the major agricultural operations.

#### Rapid Increase in Standard of Living

In essence, this entire impressive effort of economic development is definitely oriented toward an undeniably socio-human result -- the greater and rapid increase of the material and intellectual standard of living of the population, this being the fundamental goal of the whole policy of the communist party. As a major component of the standard of living, improved housing conditions for the population were reflected in the national investment program, which allocated and spent 179.1 billion lei for this purpose, 134.2 billion of these being spent between 1966 and 1978. More than 4 million housing units were made available from all categories of funds during this period, a figure that will reach 7.4-7.5 million by 1990 (table 4 and figure 3). The location of this new housing in large complexes with corresponding urban improvements and other amenities -- commercial areas, education, health, socio-cultural units, recreation and rest, transportation -- reflects a concern for increased comfort and for a better quality of life in general.

These actions will continue and will be intensified during the 1981-1985 five-year plan, when the state will build 1.1 million apartments and 50,000 places in homes for non-family persons, will lengthen the water distribution network by 4000 km and sewage lines by 3200 km, and will modernize about 1800 km of streets.

Table 4 (thousand housing units)

	Anii			
	1950-1959	1961-1970	1971-1980	1981-1990
	(D) (Proiect Directivă)			
Număr total de (A)				
locuințe	1 285,7	1 353,3	2 085,3	2 340,9-2 404,9
Număr de apartamente (B)	884,3	923,3	1 517,5	2 288,9-2 470,9
Numărul de locuințe construite de populație (C)				
la început în regiile	1 152,3	1 090,8	128,1	128,1*

\* se estimează că numărul de locuințe construite de populație în regiile în cursul anilor 1986-1990 va fi de cca. 50 mii.

- Key: (A) Total number of housing units  
 (B) Number of apartments  
 (C) Number of housing units built by the population under state supervision  
 (D) Draft for Directives  
 \*) It is estimated that about 50,000 housing units will be built by the population under state supervision during the 1986-1990 five-year plan

A significant portion of the investment program between 1951 and 1978 was used to develop the technical and material basis of socio-cultural activities. Investments of 26.4 billion lei were made in education, resulting in important new facilities such as: the Polytechnic Institute and the new building of the Academy for Economic Studies in Bucharest, the universities of Brasov, Craiova, and Galati, the Institute for Petroleum and Gases in Ploesti, and others, as well as a large number of dormitories (nearly 24,000 places between 1971 and 1978), student cafeterias, and laboratories. The health protection field has received 18.5 billion lei; new large capacity modern hospitals were built in Galati, Baia Mare, Miercurea Ciuc, Slatina, Alexandria, Vaslui, Rimnicu Vilcea, Alba Iulia, Puzau, Tirgoviste, Tulcea, Tirgu Jiu, Piatra Neamt, and the Bucharest municipality (Fundeni, Berceni, and so on); as well as clinics, dispensaries, and maternity houses. As a consequence, 9.3 beds for medical assistance per 1000 inhabitants were available by the end of 1978, as compared to only 4.2 in 1950 and 7.6 in 1965.

During the same period of time, art and culture benefited from investments of 8.0 billion lei, evidenced by many houses of culture, village cultural centers, the National Theater and the State Opera in Bucharest, national theaters in Craiova and Tirgu Mures, and so on.

The technical and material basis of education, culture, and health will continue to be developed and expanded during the next five-year plan, which will see the construction of about 100,000 places in kindergartens, 15,000 beds in health units, new movie houses, houses of culture, and clubs.



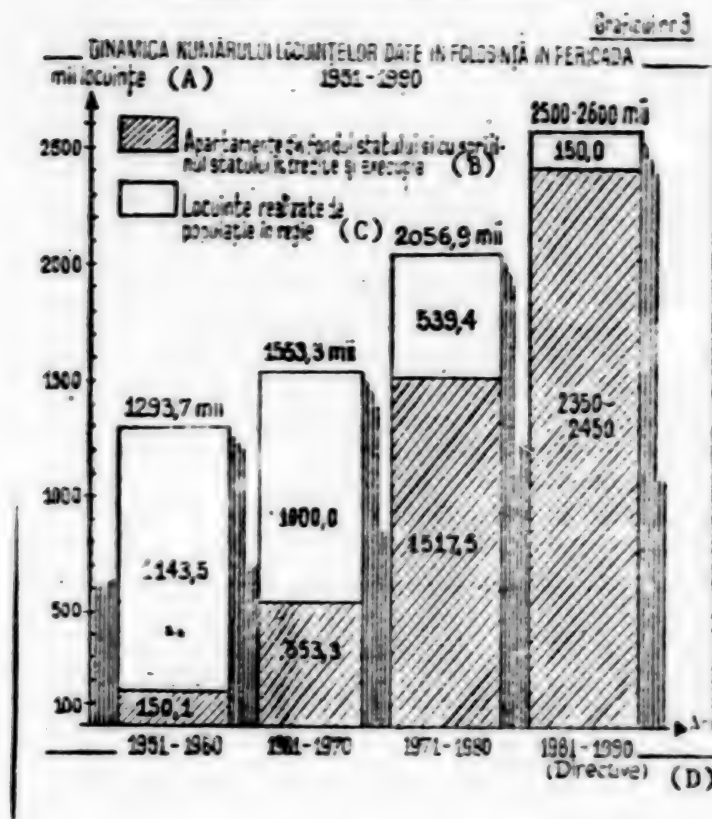


Figure 3. Number of housing units opened during the 1951-1980 period.

- Key:
- (A) Thousand housing units
  - (B) Apartments from state funds and with state support in credit and construction
  - (C) Housing built by the population under state supervision
  - (D) Directives

The consistent continuation of a rational investment policy, closely related to the real needs of the economy, will assure that production forces will develop at anticipated rates, that they will be evenly distributed throughout the national territory, and that our country will rise to new stages of progress and civilization.

11,023  
CSO: 2700

# ROLE OF WORKERS' COUNCILS IN IMPLEMENTING SELF-MANAGEMENT

Bucharest ERA SOCIALISTA in Romanian No 13, 5 Jul 79 pp 28-33

[Discussion reported by Ion Chirculescu: "Worker Self-Leadership in Comparison With Practice"]

[Text] Worker self-leadership and economic and financial self-management have acquired a wide field of affirmation throughout the economic and social life of our country, with the vast process that is taking place in order to put the economic and financial mechanism in line with the democratic organizational framework entailing on a higher plane the wide and active participation of the working people, regardless of nationality, in solving the problems of the production of material goods.

The successful fulfillment of the targets of the five-year plan and the additional raising of labor productivity require on the part of each staff in industry and agriculture, in construction, in all sectors of activity, a laborious activity for managing the production potential and the fixed assets with maximum efficiency in order to create the use values in the structure, quantity and quality corresponding to the needs of our society. In this context, the accenting of worker self-leadership is of a nature to contribute to the concentration of all the efforts of the working people on the factors of a qualitative order in production.

To militate to strengthen and develop worker democracy means, in essence, to effectively achieve the improvement of the whole activity, harmoniously combining democratic centralism with the expansion of the powers of the local bodies and the economic and social units, with self-leadership and self-management. These exigencies define the mode and sphere of action of the party organizations, emphasizing the necessity of providing as suitable a functioning as

possible of all leadership bodies, beginning with the working people's councils and the executive bureaus, from the ministries to the enterprises.

The discussion organized by the periodical ERA SOCIALISTA together with the Bucharest Municipal Party Committee, in which secretaries of party committees and chairmen of working people's councils, directors of enterprises, and party activists participated, brought out aspects resulting from the comparison of worker self-leadership with practice. The participants in the discussion brought up their own experience, formulating at the same time a number of opinions and suggestions regarding the concrete methods of improving the activity of the working people's council and affirming worker self-leadership on a wide scale.

We publish the abridged text of the shorthand record of the discussion.

#### Participants in the Discussion

Ion Bucur, secretary of the Bucharest Municipal Party Committee;

Gheorghe Barna, director, chairman of the executive bureau of the working people's council at the Upholstery Fabric Enterprise;

Ilie Bologa, secretary of the party committee and chairman of the working people's council at the "Grivita Rosie" Chemical Equipment Enterprise;

Costica Chiriac, secretary of the party committee and chairman of the working people's council at the "Metalurgica" Enterprise;

Florin Dinescu, director, chairman of the executive bureau of the working people's council at the "Cesarom" Enterprise;

Dumitru Dinica, secretary of the party committee and chairman of the working people's council at the "Inox" Enterprise;

Ion Dragu, secretary of the party committee and chairman of the working people's council at the Enterprise for Machine Tools and Aggregates;

Teodor Mihas, director, chairman of the executive bureau of the working people's council at the "Select" Enterprise;

Ana Pricob, secretary of the party committee and chairman of the working people's council at the "Dimbovita" Enterprise for Leather Goods and Footwear;

Iulia Stamatoiu, director, chairman of the executive bureau of the working people's council at the "Tinara Garda" Enterprise.

## The Stimulation of Collective Thought

Ion Bucur: The raising of the qualitative level of the work in all economic and social units and the development of the spirit of responsibility of the collective leadership bodies polarize in essence the whole group of concerns of the municipal party committee of the capital.

As Comrade Nicolae Ceausescu pointed out at the conference with management personnel in economics, the application of the new economic mechanism "presupposes above all the strengthening of the responsibility of the enterprises, the staffs of working people and the collective leadership bodies in exemplarily fulfilling the plan targets, in mobilizing all the reserves for more marked growth in economic efficiency. It is time to understand the fact that in particular the management councils of the enterprises, centrals and ministries are directly and immediately responsible for carrying out production activity. They must no longer expect someone from outside to come to solve the problems in the respective enterprise or central. This is the essential thing, in fact, in the new economic mechanism."

By means of actions well defined as to purpose and performed systematically by the party bodies and organizations, we are seeking to raise the consciousness of the working people, in order to thus cause a radical change in the view about economic development, in accordance with the requirements imposed by the generalization of the new economic and financial mechanism. Whether it is a question of expanding the role of the working people's councils and general assemblies in the life of the enterprise, of raising the quality of production, of reducing the material expenditures and the energy consumption, or of introducing modern technologies, the accent is put on stimulating the political and educational work in such a way that it helps by means of its content of ideas and its concrete character to effectively and efficiently involve those who work in the act of leadership, to create a broad view in the working people regarding their activity as owners and producers, to develop an advanced attitude toward work and public property, social responsibility. Where the party organizations and the working people's councils are acting perseveringly to utilize the technical and human potential of the enterprise as fully as possible, good results are being obtained in raising the index of use of machinery, equipment and installations, in reducing the material production expenditures and in better utilizing raw materials. All these things are being materialized in the raising of labor productivity, physical production and profits, in the raising of the degree of incorporation of technical intelligence, in the raising of the rate of renovation of production and in the improvement of the quality of products.

The party organizations, guided systematically by the municipal committee, are concerning themselves more insistently with expanding the role of the working people's general assemblies by stimulating the personality and initiative of the workers, engineers and technicians in the organization and management of production, in the efficient management of the production potential and the fixed assets. Everything that is being undertaken has as a goal



that the activity of the democratic bodies in the enterprises is to be characterized by a broad horizon, open to innovations, by vigorous, efficient actions for utilizing collective thought, for obtaining higher economic efficiency. In view of the fact that the existing possibilities are insufficiently used, a vast action is taking place in order to raise the index of utilization of machinery, equipment and installations, to better utilize the production potential and to improve the professional qualifications of the worker personnel—primary conditions for an additional increase in labor productivity and a reduction in energy consumption. Action is being taken more insistently to generalize the advanced experience, having in mind, among other things, the providing of the sensible employment of machinery and equipment on all shifts, the putting of the workers to work on many machines, and the introduction of scientific gains and modern technologies into production.

Undoubtedly, the effective affirmation of worker self-leadership is not accomplished by itself, just on the basis of issuing and adopting decisions. It is necessary to eliminate the old practices and methods, to overcome the inertia and the conservative spirit which are still encountered in some places and which diminish the efficiency of leadership, reduce the organizational capacity. We start from the consideration that the democratization of the act of leadership presupposes not the mere presence of those who work in different bodies, but a dynamic social action, with profound implications regarding the conscientization of the working people, in such a way that they exercise their powers in a spirit of high responsibility and decide with all possible efficiency on all problems that the development of modern industrial production raises. Hence the necessity of persevering to raise the level of political training and to enrich the economic and management knowledge of the members of the working people's councils. The courses for training the party secretaries and the vice chairmen of the working people's councils take place under the direct leadership of the municipal party committee, with the program being drawn up in such a way as to ensure the mastering of the legislation, of the style of work, of the science of management and organization of production.

Florin Dinescu: In order to fulfill their role, it is necessary, among other things, in my opinion, to homogenize and stimulate the collective thought in the working people's council. We—those who work at the "Cesarom" Enterprise, where the making of decisions has not yet come to constitute equally the result of the effective participation of all the members of the council—have convinced ourselves of this. In most cases, the representatives of those who work on the working people's council refrain from formulating justified criticism about the management personnel or from taking a firm stand against shortcomings in the organization and management of production. There is a timidity that "dries up," so to speak, their contribution to discussing and solving the problems.

Iulia Stamatoiu: I do not share this viewpoint referring to timidity. At the enterprise where I work, "Tinara Garda," the representatives of the

working people know quite well the problems at their workplace and explain them in the meetings of the working people's council, supporting them with sound arguments.

**Ilie Bologa:** By no means can it be a question of timidity. The workers are not timid. I believe, and I am more than certain, that it is a question of the way in which we, especially the party secretary, work with these representatives, as they are involved in solving problems that confront the working people's council. With us too, at the "Grivita Rosie" Chemical Equipment Enterprise, some comrades exhibited passivity toward the discussion of problems, did not openly express their opinions, although they had something to say. In order to get them out of this state, for each problem that was to be discussed in the working people's council we helped them concretely to study certain aspects in the section or shop where they work and to formulate proposals themselves. We consult them regularly before making a decision, and during the meetings their opinion is asked.

I believe that it is necessary for us to persevere in precisely this direction. Since—why not say it?—some members of the working people's council, although they know quite well the problems at their workplace and subject them to discussion, can speak less about problems that involve the whole enterprise, such as, for example, the concluding of economic contracts and the respecting of contractual clauses, the execution of investments, and relations with customers or with suppliers of raw materials.

**Florin Dinescu:** I hark back to the problem that I raised because, as follows from the experience of our enterprise and, from what I realize here, of others too, its solution, which is by no means easy, is of great significance for expanding the role of the working people's council. I emphasize: it is not a question of timidity in general, as an emotional trait, but especially of a lack of experience in matters of management, an insufficient knowledge of the problems of the enterprise. To take this state of affairs into consideration, to look reality in the face is a necessity, an efficient way for us to formulate that choice of action that can have extremely positive implications regarding the improvement of collective leadership, regarding its homogenization—namely, the thorough political and professional training of the members of the working people's council. For any member of the working people's council the range of reaction can be limited and the participation reduced if he does not possess knowledge about the enterprise where he works and a broad political horizon, which give him the possibility of "rising" above his workplace, of grasping the problems of the whole activity of production, of synthesizing the proposals and ideas of the people, of formulating well-substantiated solutions with a view to making the decisions.

**Dimitru Dinica:** Of no less importance is the creation of that climate favorable to the open expression of opinions, including criticism about responsible officials, regardless of their position. At the "Inox" Enterprise, the stimulation of the opinions of the people concerns the party organization to the highest degree. On the basis of the proposals of the members of the

working people's council or of other workers in the sections and shops, a number of actions regarding the raising of the index of utilization of machinery and installations, the raising of the degree of technicality of products, and the economizing of raw materials have been organized in the enterprise.

It is necessary for us to persevere to develop an advanced attitude toward work and public property. In this way, we will be able to efficiently prevent the manifestation of those undesired practices, such as, for example, the failure to take into consideration valuable suggestions or proposals of the people, with all kinds of "justifications" being invoked, which cannot stimulate worker criticism and self-criticism.

Ion Dragu: The experience of the Enterprise for Machine Tools and Aggregates shows that the activation of all members of the working people's council represents a vital question for the proper functioning of worker democracy. A special accent has been put on rigorously planning the work, thus ensuring the sensible "loading" of each member of the council. In this way, so that all members may make their contribution to making the decisions, the solutions subjected to collective discussion are prepared in advance and in many variants, thus giving each one the possibility of substantiating his choice in conformity with the concrete conditions in the section or shop where he works.

Ana Pricob: With good reason, the necessity of thoroughly training the members of the working people's council has been pointed out here. However, I feel that the selection of them is equally important. At the "Dimbovita" Enterprise, the qualities that must be possessed by those selected were not taken into account in all cases. Some were selected for the working people's council because they are amiable people who do not bother anyone, and others were not changed for a long time, although they almost never gave their opinion, did not convey the word of the people whom they represent, were content with a quiet, perfunctory atmosphere during the meetings. In view of these states of affairs, we increased the exigency in the general assembly of those who work regarding the selection of the members of the working people's council, ensuring the promotion of the most capable and militant people to this body. By means of concrete political and educational actions, filled with lessons, the party organization has combated the attitudes of formalism, helping each member of our group to perceive not only the mission of the working people's council but also the fact that its role cannot be fulfilled unless the members that compose it are among the best and constructively "bother" anyone in the leadership of the enterprise.

#### Collective Thought Increases Personal Responsibility

Gheorghe Barna: The matter of strengthening and affirming as efficiently as possible the principle of collective work and the unity of action within the working people's council does not exclude but, on the contrary, presupposes the delimitation of the responsibilities, of the load of suitable tasks on



each member of this body. The powers conferred on the enterprises by the law on the organization and management of the state socialist units offer wide possibilities for utilizing the capacity of each member of the working people's council.

However, life has demonstrated the necessity of defining the mode of working, of operation of the executive bureau between two sessions of the council. We, those who work at the Upholstery Fabric Factory, feel the need for an ordering, a functional specification of the activity of the collective leadership body, this being of a nature to lead to an increase in the degree of cooperation within the working people's council.

Teodor Mihes: The unity of thought and action within the working people's council depends to a great extent on good cooperation between the chairman of this body and the director, cooperation that is based on the laws of the state and the decisions of the party. At the "Select" Enterprise, a special accent is put on knowing the laws, the regulatory acts. This allows us to act with a spirit of responsibility and competence, avoiding the adoption of decisions not in accordance with the legislation.

Costica Chiriac: The precise, clear definition and delimitation of the duties of the chairman of the working people's council, as well as of the vice chairman of this body, are not a formal question but represent a necessary condition for increasing the efficiency of self-leadership, for eliminating some duplication in management. At the "Metalurgica" Enterprise, we have managed to establish at least a program on the basis of which the executive bureau of the working people's council performs its activity. Nevertheless, some duplication was not able to be eliminated in certain situations, with both the chairman of the working people's council and the director, as the case may be, occupying themselves with the same problem.

Iulia Stamatoiu: In order to avoid a number of duplications, we decided that the executive bureau of the working people's council is to concern itself especially with the introduction of new technologies and products, the investment work and so on. At the same time, we made an "inventory" of the problems with which the enterprise is confronted, they being divided, with a view to their solution, between the chairman of the working people's council and the director.

Dumitru Dinica: I consider it right that the working people's council be concerned with the strategy for developing the enterprise and that the executive bureau be concerned with the current problems of production, of the manufacturing processes, with all the aspects that they involve.

Florin Dinescu: I do not believe that the concerns of the working people's council can be separated from those of its executive bureau by a line of demarcation. On the contrary, applying with understanding the principle of collective work in relation to the concrete conditions, it is possible to provide good cooperation between these leadership bodies with regard to both current activity and future activity.



Ilie Bologa: Nor do I share the idea of a strict delimitation between the duties of the working people's council and those of its executive bureau. However, I consider it proper to specify the duties of the chairman of the working people's council, especially because they are imposed by life, this being of a nature to increase the authority of the party secretary and of the working people's council in its entirety and to raise the efficiency and effectiveness of collective leadership. However, in specifying the duties it is necessary to take into account the party secretary's tasks and the conditions under which he performs his work. As is known, the party secretary, who is also the chairman of the working people's council, is responsible for the entire political and organizational activity as well as the proper functioning of collective leadership, for the way in which the problems are solved and how each member of the working people's council and each working person in the enterprise fulfill their duties. Moreover, the expansion of the role of the party organization and the organic integration of each communist into the life of the enterprise are based on this comprehensive responsibility.

Even only outlined, this wide range of concerns and responsibilities shows how wisely the worktime of the party secretary must be used and how valuable the time spent in the enterprise becomes. Unfortunately, a considerable part of this time is spent on various activities that take place outside the enterprise, for performing functions or for solving problems within the enterprise that can be handled equally well by other members of the working people's council.

Starting from these considerations, I am in favor of limiting the number of meetings in which the party secretary must participate outside the enterprise, of eliminating the practice of resorting only to his person on any question referring to the problems existing in the enterprise, of sensibly dividing up some functions so that the party secretary can be relieved of some of them.

Ion Bucur: Certainly, the delimitation of duties is a problem on which it is still necessary to reflect, with the experience of a greater number of enterprises being taken under analysis.

Today, when the production plan of the enterprises must be based only on economic contracts concluded in advance, the capacity of the working people's councils to combine current activity with future activity is acquiring great significance. Although a number of successes are to be noted with regard to the delimitation of the tasks within the working people's councils, the management personnel continue to be occupied by current problems the great majority of the time. Those chairmen of working people's councils or directors of enterprises who spend a considerable amount of time only on solving the problems referring to the furnishing of raw materials and supplies are not few. In order to overcome this state of affairs, it is necessary for us to provide real conditions for the future work, so that some personnel in the leadership of the enterprise may concentrate their attention especially on

the concluding of long-term economic contracts, the technical-material supply, the renovation of products and technologies, the prospecting of the market, and so on.

Iulia Stamatoiu: In my opinion, the raising of the percentage of time for thought, for conception also relates to the proper organization of the work of the council, the strict respecting of the work program by each member. It is true that in my case too, in the activity of dispatching, the concern for the technical-material supply occupies more than 60 percent of the worktime. But it is just as true that more time is consumed because not all members of the working people's council fulfill the obligations that they have or because, due to unsubstantiated plan targets, there is a need for an additional effort, done in a rush, in order to fulfill the targets. However, all these things, as well as the activity of dispatching, are done to the detriment of that part of the program meant for thought, the work of analysis, leading to the prolongation of the worktime far beyond normal.

Ion Dragu: I believe that it is necessary for the problem of the future activity to be regulated in the light of the requirements of worker self-leadership and of the new economic mechanism, because otherwise the collective leadership of the enterprise cannot do more than at present. In support of this assertion I mention that the future activity at the level of the working people's council at the Enterprise for Machine Tools and Aggregates covers a small part of the concerns, with the rest being constituted at the level of the higher-ranking bodies, which I find to not be normal.

#### A Dynamic, Militant Style of Work

Ana Pricob: The experience of the "Dimbovita" Enterprise demonstrates that the dynamic, active style of work constitutes an important factor with the help of which the working people's council succeeds in coordinating and uniting the collective effort to fulfill the targets, in consulting the people, in listening to their opinions and acting efficiently to handle the problems and the suggestions of those who work, in providing a democratic climate for work.

In the light of the requirements of self-leadership and of the new economic and financial mechanism, we rethought the style of work of the working people's council, so that the concrete, effective resolution of the problems constitutes the center of the entire activity of all members of this body. We devote special attention to the preparation of each measure or decision, organizing the discussion of them in the sections and shops with the whole staff before they are discussed in the working people's council.

We are continually concerned with blending the party work with the activity of the working people's council. To this end, we eliminated the so-called minor matters from the activity of the working people's council, assigning them, according to the problems that they contain, to the proper bodies or departments.

Costica Chiriac: The affirmation of worker self-leadership in practice is organically connected with the wide-scale use of the commissions for fields. Until not long ago, at the "Metalurgica" Enterprise, they were consulted, as a rule, when some deficiencies were found in one sector or another. However, life has shown that these bodies, which contain a great number of working people, can systematically study various aspects, offering valuable elements for making the decisions. The commissions for fields are now integrated organically into the activity of substantiating the decisions, whether it is a question of improving and modernizing the manufacturing processes, of carrying out the investment work, of increasing the economic efficiency, or of solving social problems.

Gheorghe Barna: The quality of collective leadership and its efficiency would only gain if the time for thought, for conception represented the due percentage in the activity of the working people's council. Unfortunately, this is not how matters stand. Besides the aspects presented here, the one cultivated by the phobia of inspection is no less harmful. In violation of the regulations in force and without having the advice of the higher body of the enterprise, a number of synthesis bodies make one inspection after another, inspections that in their great majority do not justify their efficiency and utility, very few of them being used to make decisions. Instead, these inspections take away from their activity the personnel of the enterprise, who are obliged to give all sorts of explanations, to draw up scores of statements and reports, and so on. And, since each of these inspectors who come to make an inspection absolutely insists on talking with the chairman of the working people's council or with the director, it is easy to understand how much time is spent on an activity that, I repeat, does not justify its utility for the most part.

Dumitru Dinica: The activity of the working people's council at the "Inor" Enterprise had much to gain by the elimination of the practice of preparing plans of measures for each action or problem. Life has shown that the problems can be solved effectively without the preparation—whether or not it is necessary—of plans of measures, since the practice of resorting to plans of measures for every action hinders effectiveness.

It would be good if some higher-ranking bodies would decline to ask for all sorts of plans of measures or actions, which require too much time for their preparation, and would instead help us concretely to solve the problems.

Costica Chiriac: The efficiency of the work of management could be much greater if the rationalization of records were achieved in practice by substantially reducing the number of state and departmental reports and indicators. Besides the number of indicators, which has become greater and greater, all sorts of accounts, statements and reports, which involve a considerable part of the technical and administrative personnel in their preparation, are drawn up.

Florin Dinescu: In order for the industrial central to truly represent a functional organism that coordinates the whole activity, unites the efforts



and stimulates the qualitative growth of production, it is necessary for it to have suitable instruments, power of management. The fact that it does not possess powers, as it should, explains why the industrial central practices the method of doling out the plan targets, oversees the activity more from a staff viewpoint, transmits and receives statements, statistical data and various targets and has power to decide only on minor matters. From this comes, I believe, also the inability to be close to the enterprises, to participate directly in solving the problems. However, the central, knowing well the realities, can be in a position to ensure the preparation of a plan at the level of the possibilities of each subordinate enterprise.

Dumitru Dinica: Fruitful and systematic cooperation between the enterprise, the industrial central and the ministry throughout the period of preparing the plan, as well as throughout the activity of managing production and utilizing the products, represents an essential condition for the strengthening and development of worker self-leadership. The leadership of the "Inox" Enterprise is on good terms with the industrial central, but they can be improved, in accordance with the requirements posed by the new economic mechanism, in order to contribute to the qualitative growth of the whole activity. Many things could be resolved effectively if we were helped effectively in providing the contracts for selling the products through exportation.

Teodor Mihas: Systematic and efficient participation in the life of the enterprise by the personnel in the industrial central would lead to the elimination of many bureaucratic practices. At present, we are spending much time on analyzing the various materials sent by the central, the ministry or other central synthesis bodies, materials that, in my opinion, should not require the working people's council. Moreover, through a number of orders of the higher bodies, at the level of the activity of the working people's council it is necessary to analyze all sorts of problems such as labor protection, morbidity, the cost plan, the balance sheet analysis, the allocation of housing, and so on. Without disputing the importance of these problems, it is nevertheless necessary that the period for analyzing them and the time spent on discussing them be left to the discretion of the working people's council.

Ana Pricob: The new requirements necessitate the proper solving of the problems of the enterprises onto which the industrial centrals are grafted, as is our case, where the Central for Leather Goods and Footwear is grafted onto the "Dimbovita" Enterprise. As a result, the deputy director general of the central is also the director of the "Dimbovita" Enterprise. Due to the obligations that he has within the central with regard to coordinating and solving the problems of the 60 subordinate units, the director is not at the "Dimbovita" Enterprise during more than one-third of his time, which causes irregularities in the activity of the working people's council, reduces the spirit of responsibility and affects the relations between the central and the enterprise.

In view of this, we consider it necessary that the chief engineer be the director and the first vice chairman of the working people's council at the level of our enterprise.



Ilie Bologa: The regulating of the problems that result from the grafting of the industrial central onto a certain enterprise, as is also the case with the "Grivita Rosie" Chemical Equipment Enterprise, is not a question only of an organizational order, but, above all, it relates to the content of worker self-leadership. Through the relations existing at present, the autonomy of the enterprise—that is, one of the basic conditions for economic and financial self-management—is weakened, as also has been pointed out here. Besides this, a number of negative phenomena that harm the activity of the enterprise are cultivated. Thus, due to the fact that for the same work and specialty the pay is higher at the industrial central, a number of good personnel of our enterprise have gone over to it. I believe that it is necessary for the pay for the same work to be identical, both at the central and at the enterprise.

#### The Respecting of the Powers Conferred by Law

Ilie Bologa: The essence of the affirmation of worker self-leadership consists of firmly respecting the powers conferred by law and, to an equal extent, increasing the responsibility of the working people's council for raising the efficiency of production. According to the law on the organization and management of the state socialist units, wider powers in planning and carrying out their own activity have been conferred on the enterprises, powers that do not mean a mere delegation of responsibilities but represent the effective application of worker self-leadership.

In practice, however, these powers conferred by law on the enterprises find a place for themselves with too much difficulty. There still is a certain rigidity on the part of some ministries and industrial centrals, a rigidity that is manifested in various forms, such as, for example, the limitation of the initiative of the production units, petty administration, or the issuing of all sorts of instructions for applying the laws and regulatory acts.

Costica Chiriac: In order to have a truly real role in preparing and substantiating the plan, it is necessary for the enterprise to benefit, according to law, from greater liberality, in such a way that, with the effective help of the higher-ranking bodies, it may solve all the problems that concern the covering of the plan with firm contracts at the level of the existing capacities, the furnishing of the technical-material supply, and the technological preparation of the products.

Gheorghe Barna: Under the conditions of the new economic and financial mechanism, there are well-founded motives for giving the due trust to the enterprises, to their collective leaderships, in conformity with the laws of the country. I feel that, besides the laws of the state, the trust springing from the nature and character of socialist ownership forms an integral part of the complex of factors that provide for the efficient affirmation of worker self-leadership and economic and financial self-management in practice. At the Upholstery Fabric Enterprise and, as far as I know, at many other enterprises as well, there are strong party organizations, personnel with

extensive experience in the management and planning of production, a competent corps of engineers, and highly qualified workers. All of these realities, more and more evident in recent years, do not justify the ignoring of the powers of the enterprises to a greater or lesser degree, the hindering of initiative, but, on the contrary, represent a strong basis for the affirmation of self-leadership and of the responsibility of the enterprises.

Costica Chiriac: At the level of the working people's council it is necessary to grant powers that permit it to decide promptly on measures that involve the raising of efficiency in the enterprise. I have in mind those unforeseen situations when the functioning of the production process requires expenditures, the pay for manual labor for promptly dealing with aspects of a technical order. Although these are expenditures that are justified, leading to a rise in economic efficiency, the leadership of the enterprise cannot make them except only if it obtains the respective approvals, which, as a rule, are not given very often.

Teodor Mihes: The preparation of the production plan on the basis of economic contracts concluded in advance is of a nature to eliminate the old and harmful practice according to which the ministry "doled out" the plan to the central, and it, in its turn, divided it up among the enterprises according to sometimes arbitrary criteria. Under these conditions, it is necessary to correlate on a realistic basis the resources and possibilities with the requirements of production and consumption. As a result, more than thus far, there is a need for close cooperation between the enterprise and the higher-ranking bodies, on the basis of which the real technical and human potential of the enterprise, as well as the economic contracts concluded, would be taken into account in preparing the plan.

Iulia Stamatoiu: The essence of planning from "bottom to top" consists of the calculation for substantiating the existing possibilities and those that can be mobilized through the application of technical and organizational measures. Only in this way will the planning show the maximum that can be produced and the optimum in consumptions of resources that must be used.

Along another line of thinking, at least in light industry, the modification of the plan figures is not the result of a "practice" but a necessity dictated by the interests of the customers, by the stimulation of exportation and of technical progress. What must be resolved relates to the effectiveness of the plan modifications and the possibility of adjusting the stocks of raw materials and supplies.

Ion Dragu: The efficiency of the work in the field of technological engineering would be much higher if the enterprises had, as in the not too remote past, powers in the field of design and scientific research. The concentration of the design activity in institutes is a good thing, but I believe that this way cannot be absolutized. I base my assertion on the experience of the Enterprise for Machine Tools and Aggregates. The transfer of designing from the enterprise to the institute (the Institute for Research and Design of Machine Tools and Aggregates) has led to the appearance of difficulties that

are of a nature to reduce the role of design in stimulating the new in technology and in economizing on energy and on material and monetary resources. First, as compared with the past, the execution of designs is not done within the required time but within the limit of the available time of the above-mentioned institute and at a price that is 5-10 times higher. The design institute does not know to a sufficient degree the needs of the enterprise and the level that has been reached with the changes and the modernization of a product, a fact that causes a part of the construction solutions to not correspond to that requested by the enterprise. Second, in designing a product, similar products that are being manufactured are not always taken into account in order to thus ensure a high degree of reuse of components and subassemblies, with a view to reducing the time for assimilation and the respective expenses. This situation is caused by the fact that the value of a design depends on the number of components designed. This is precisely why the institute proceeds to totally redesign a product, which leads to new preparations for manufacturing, to the lengthening of the time for assimilation, to uneconomical expenses. However, in modernizing the products, it is not necessary to start by totally redesigning a product but by redesigning the subassemblies that are not viable. In this way it happens that a new, modernized, competitive product, in demand both in the country and for exportation, appears in the course of 1-2 years, a product that can be manufactured without totally changing the manufacturing process and without high expenses.

I feel that the design institute should limit itself to designing the machines contained in the long-range programs, should conceive and design the products that will go into manufacture in the next 3-4 years, and the current designing, the modernization and the diversification of the products should be done within the design shops of the enterprise, which would be organized and equipped in a suitable fashion.

Dumitru Dinica: The existence of a strong design and research department in the enterprise constitutes an essential condition for intensifying the process of modernizing and renovating the products and manufacturing technologies. Up to 1977, when the "Inox" Enterprise had a design shop, the activity of renovation of production was much more efficient. In 1977, along with the fact that the number of new products was higher than in 1978, the expenses related to the work of design and technological engineering amounted to about 1 million lei, as compared with 2.8 million lei in 1978. Although the design shop continues to exist in the precincts of the enterprise, we cannot use it because it has a plan of its own provided by the institute, in which objectives that have nothing in common with our specialty are included. And while we have to make all sorts of advances to the institute for handling the work of design and technological engineering, the shop that I mentioned does not use even 50 percent of the time that it has at its disposal.

Iulia Stamatoiu: A certain flexibility in setting and approving the prices is more than necessary, and I believe that this does not affect in any way the general policy in the field of prices. I have in mind here the goods in odd lots, which cannot be sold at the established prices and which stay in the warehouses because we do not have the possibility of establishing for



them a more advantageous price that would permit the sale of them on the market. I believe that this is possible.

Florin Dinescu: If not the enterprise, at least the industrial central should have this power, thus contributing to effectiveness in the appearance of new products on the market, as well as to the elimination of those situations that have nothing in common with efficiency and the satisfying of the demands of the market. I have in mind here the so-called technological losses—that is, products that have minor defects, which nevertheless do not influence their functionality in any way. Since we do not have the right to set the price and to sell these products, which, I repeat, can be utilized without problems, we are obliged to break up and throw away crockery, sandstone plates, and sanitary objects for bathrooms. It is an odd practice whose economic sense I do not see.

Ion Dragu: In order to stimulate the movement of inventions and innovations it is necessary to improve the current legislation. At present, it does not provide sufficient effectiveness in the introduction of innovative ideas into production and stimulates insufficiently the creativity of the working people. The experience of the Enterprise for Machine Tools and Aggregates shows that since 1974, when changes were made in the legislation on inventions and innovations, this activity has followed a descending curve. Between 1969 and 1973, the annual average of proposals of innovations amounted to 40, with the number of proposals being 49 in 1971, but in the 1974-1978 period, only 4 proposals were made on an annual average, with the proposals being in a continual decline for years: 8 in 1974, then 4 in 1976 and 1 in 1977. However, technical creativity in the form of inventions or innovations, especially in the five-year period of the scientific and technical revolution, is not and cannot be considered an activity on the periphery of the table of organization. On the contrary, it is a peak activity, pioneering work, which entails technical ability and passion.

These considerations, as well as the others expressed here, plead for the improvement of the legislation on inventions and innovations.

Ilie Bologa: I believe that it is no longer necessary to demonstrate the significance of savings of raw materials and supplies, of energy and fuel. At the "Grivita Rosie" Chemical Equipment Enterprise too, under the direct leadership of the party organizations, extensive actions in this regard are taking place, there being concretely supported the application of initiatives and technical solutions offered by workers, engineers and technicians. However, the results would be far better, but Decision No 1,051 of the Council of Ministers, providing for the keeping of complex records according to sections, shops and persons—a thing that cannot be achieved, in fact—does not permit the use of material incentives. The revision of this decision in the light of the principles of self-management and the income and expense budget would be apt to stimulate each working person to be concerned day by day with the achievement of savings of raw materials and supplies.

Florin Dinescu: Some indicators are downright illogical. I am referring particularly to the "tons" indicator. Instead of getting in the plan how



many pieces of sanitary objects we must produce, we are given a total quantity expressed in tons. This is incomprehensible for at least two reasons. First, an apartment is not equipped with kilograms of sanitary fixtures (crochery, washstands, plates, sandstone and so on), but with pieces and square meters, just as people do not buy kilograms of such objects from stores, but pieces and square meters. Second, this indicator promotes high consumptions of raw materials and thus of energy, since it does not stimulate the manufacture of low-weight products and the diversification of production; the whole idea is to produce a certain number of tons. However, it is not the same thing if, for instance, 1,000 or 1,500 pieces of washstands and so on are produced from 1 ton of raw material.

Ion Bucur: In all fields of economic and social life, the effort for a new quality is synonymous with the accenting of the role of worker self-leadership, with the more and more active participation of the working people in the management of production, of the whole society.

The application of worker self-leadership and economic and financial self-management means in essence that at each workplace the newly created value, the only thing capable of contributing to the faster development of society, increases more and more, through the reduction of material production expenditures and material consumptions, through the application of modern, highly efficient technologies. Each staff of working people bears the direct and immediate responsibility for sensibly using the resources and goods entrusted by society, for obtaining higher outputs.

It is necessary for us to improve the activity of the working people's councils, to expand their role. The capacity of belonging to this collective leadership body, of being the chairman, the vice chairman or a mere member, does not mean an honorary position but comprises all the attributes of a great political responsibility for the whole activity of the enterprise, for the application of worker democracy, for the union of the efforts of those who work to fulfill the targets. From this come the great obligations that stand before the party organizations. This is precisely why we must raise their activity to the level of the current requirements, of the objectives established by the party, persevering, with this end in view, to bring about a qualitative leap in the work of the party organizations, to impart a dynamic style of work that continually stimulates the creativity of the working people and provides a climate favorable to the expression of opinions and proposals. Decisively combating the conservative, routine spirit, the antiquated mentalities, and promoting a revolutionary climate, the party organizations are in a position to utilize the collective wisdom and experience, to develop the worker spirit in economic life, in the leadership of all sectors of activity of society.

## MEASURES TO REDUCE ENERGY CONSUMPTION IN STEEL PRODUCTION

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[Article by Prof D. C. Trausanu]

[Text] The draft for the Directives of the 12th Congress of the RCP, regarding Romania's socioeconomic development for the 1981-1985 five-year plan and guidelines until 1990, stipulates significant tasks for the intensive development of non-ferrous metallurgy. As the secretary general of the party, Nicolae Ceausescu, has pointed out during the workshop devoted to improving the activities of the steel industry, this sector -- a large user of electric power and fuels -- must make greater efforts to continue to increase its production and substantially improve the quality of steels, while significantly reducing its consumption of power and fuels throughout its processes. Steel industrial enterprises will have to be more consistent in clearing up shortcomings, and in completely fulfilling during this year, the plan's provisions for the production of steel, millings, and other metallurgical products, with reduced consumptions and greater efficiency. It therefore becomes necessary to widely use technologies with high productivities and better energy yields, optimize manufacturing processes, place greater emphasis on product standardization, and rigorously meet established consumption quotas.

In order to fulfill in an exemplary manner these tasks, which are highly significant in improving production efficiency and conserving energy resources, all metallurgical enterprises -- of research, design, production, and constructions -- are formulating and taking steps to reduce fuel consumption, and are intensifying actions aimed at deriving greater value from domestic coal resources in metal manufacturing, at reducing coke consumption in furnaces, and at adopting in the production of steel, new structures and techniques designed to substantially reduce the energy incorporated in the final product.

## Better Exploitation of Domestic Coal Resources in Metal Production

Of all the processes involved in steel manufacturing, the furnace coke sector has the highest consumption of primary energy at 60-65 % (see table).

## Energy consumption at phases of metallurgic technical processes.

Technical phase	Net energy consumption (million Kcal/kg)
Pig iron production in furnace	3.710
Coke production	3.0
Steel manufacturing: Martin	1.31
Electric	0.83
Converter	0.53
Milling (adjusting)	1.25
Milling (thinning)	0.44
Pouring (continuous)	0.25

An examination of the table shows that the production of pig iron in furnaces consumes a great deal of energy, mainly in the form of metallurgical coke, as well as in the form of auxiliary fuels. Metallurgical coke is produced in coking ovens from cokable coals, by means of high temperature distillation. According to UN data, cokable coals represent 20 % of the world's coal reserves, and the price of coke on the world market is approximately equal to the price of wheat. Countries which do not have cokable coals -- among which our country -- use poorly cokable coals to manufacture coke, along with semi-coke for fluidization and for degreasing the paste in coke charges. And even though the production of washed coal for coke will increase by 59 % during the 1981-1985 five-year plan, the domestic coke obtained from it will be insufficient and we will have to import coke and cokable coals.

While coke and cokable coals could be found in large quantities and at reasonable prices in the past, at present and in the future, the amount and prices of these resources throughout the world make it necessary to reduce their consumptions for steel manufacture, and to derive much greater values from domestic coals in metal production.

An important approach in this respect is the growing trend to introduce up to 50 % of poorly cokable non-agglomerated (energy-producing) coal into coking charges. In order to utilize this coal in steel processes, techniques have been developed throughout the world for fine crushing, optimum mixing, good drying, and preheating of charges up to 200-250 degrees C, and for stamping (pressing) of the paste with or without binders. Currently, these techniques, which have been tested here by the Institute for Metallurgical Research (ICEM), have led to some improvements in the physico-mechanical properties of domestic metallurgical coke, together with an increase to as much as 70 %, in the proportion of PAL energy-producing coal from Valea Jiului in coke charges. Continuing experiments are seeking not only to raise the productivity of coke batteries up to 40 %, but also to increase the proportion of energy-producing, poorly cokable PAL coals in charges. In addition, 1-3 % improvements in the M-40 index, and 1-2 % improvements in the M-10 index, have been made in the physico-mechanical and

granulometric properties of the 60-25 mm class of coke, depending on charge compositions. This will provide new techniques which will allow a more extensive use in steel manufacturing, of inferior and poorly cokable domestic energy-producing coals, and a corresponding reduction of importations with savings of large currency funds.

To these efforts must be added those associated with increasing the productivity of coke plants. It is estimated that the envisaged construction, at the Galati and Calarasi steel combines, of high capacity coking batteries, with large volume, highly productive (1.5-2 million tons/year) horizontal chambers, will result in reductions of 15,000 tcc (tons of conventional fuel) per year at Galati, and of 30,000 tcc/year at Calarasi. Coke production can also be increased by shortening the duration of coking charges from 15-12 to 8 hours, using higher yield processes, as well as by increasing the coking rate from 25-30 mm/hr to 50 mm/hr by operating production systems in a continuous manner. However, this requires special conditions and the replacement of the present glass bricks which comprise 70 % of the liners, with magnesite bricks which contain less iron, corundum bricks, silicon carborundum liners, and so on. Through its own efforts, Romania's refractory materials industry will have to introduce the appropriate refractory materials needed by the metallurgical sector (from existing rich sources of raw materials), since new materials of the type indicated above could increase the productivity of coke batteries by 50 %.

#### Greater Reduction of Coke Consumption in Furnaces

Not to be overlooked is the fact that coke production itself requires large amounts of energy. Consequently, the reduction of coke consumption by all possible means -- particularly in furnaces, which use up significant quantities of it -- is of maximum importance. The theoretical consumption of dry coke in a furnace is 380 kg/ton of pig iron. Up to now, the consumption of coke in Romania has decreased from 693 kg/t in 1970 to 589 kg/t during last year, and this year's consumption is expected to be 558 kg/t of pig iron. At the Hunedoara Steel combine, coke consumption since 1970 has been reduced by 104 kg/t of pig iron, by properly preparing the quality of charges and by increasing the temperature of the air blown into furnaces.

1. Such results are possible in operating furnaces by perfecting the "recipes" of charges, increasing the degree of preparation of raw materials introduced into furnaces (ores, coke, and fluxes), raising temperatures and pressures in wind-boxes, enriching the air with oxygen, partially replacing the coke, and so on. In order to increase pig iron production and reduce coke consumption, extracted ores are enriched, and before being loaded into furnaces, are homogenized and agglomerated in continuously operating installations to improve their reducibility and thereby conserve energy (indigenous, poor iron ores with less than 30 % Fe from Ghelar-Teliuc are enriched to 50-55 % Fe through preparation). The need to intensify such actions is of maximum importance when one considers that each percent of iron added to furnace charges reduces the specific coke consumption by



1.5-2.5 %. At the same time, and within the limits of acceptable offers and prices, there is an evident need for foreign trade organs and organizations to widen their market searches for the procurement of imported iron ores of superior quality.

2. Significant savings of coke, as well as higher metal production, were obtained by directing steel industry investments toward the construction of new, high capacity furnaces, with more than 1000 cubic meters of useful volume.

The high pressures available at loading doors, made possible by such installations, considerably facilitate and improve the gas dynamics of the rising gases within these furnaces, this being considered by specialists as the most important step in increasing furnace productivities. Each 0.1 atmosphere increase in pressure increases the productivity by 1 %, concurrent with the possibility of using finely crushed materials in charges, whose large specific areas provide better heat transfer for ore reduction and iron flow, and therefore conserve energy.

3. And finally, significant savings of coke can be obtained through the use of modern, improved technical processes. The insuflation into furnaces, of air enriched with up to 30-35 % oxygen and methane (combined wind), and intensified melting, have so far increased the productivity of some of our steel furnaces by 2-2.5 % for each additional percent of oxygen (in the wind), and reduced coke consumption by 0.7-0.9 kg per cubic meter of injected methane gas. In addition to expanding the successful experiences gained from existing modern processes, it is imperative to introduce new, high yield processes developed throughout the world. During the last 10 years, as part of the modern technology used in furnaces throughout the world to intensify melting and therefore conserve coke, and to radically increase productivity, very hot reducing gases (conversion products) enriched with 30-35 % cold technical oxygen, are injected into the crucible without wind, with a small amount of oxidants which contain carbon and hydrogen. In these cases, coke consumption is reduced by 25-28 % and productivity is increased by 23-29 %, compared to processes that inject only air enriched with oxygen and methane.

It is imperative that the Romanian refractory materials industry, using abundantly available indigenous materials, introduce the production of suitable special refractories in order to reduce importations. However, it should be kept in mind that refractory products are also large consumers of energy and fuels during their firing, as a result of which their expanded utilization and the fabrication of various compositions must be accompanied by rigorous calculations aimed at minimum energy consumption in their production and use.

## Modern Technologies to Support the Minimization of Energy Consumption

The Bessemer and Thomas processes played a predominant role in steel production throughout the world until 1900, and the Martin process since then. With the appearance of the oxygen converter in 1952, the Siemens-Martin process gradually lost its position, making room for the electric arc converters and ovens. Since 1955, radical changes have taken place in the fabrication of iron, steel, and milled products. While Martin steel represented nearly 80 % of the world's steel production in 1955, this percentage decreased to 70 % in 1960 and to 40 % in 1970, and will be about 10-12 % in 1980. This decrease is due to new technologies which use pure oxygen on an industrial scale for breaking up pig iron in LD-type converters, as well as to an increase in the proportion of electric steel in the total steel production.

In the opinion of specialists, a limited production of Siemens-Martin steel will persist until the year 2000, using oxygen blown into the metal bath to intensify the actual metal fabrication process. After 1970, the LD process with converter, with its high productivity and its adaptability to any kind of pig iron, made it possible to fabricate a wide variety of high and low alloy steel formulations. This is currently the preponderant process in the world production of steel. It is estimated that by 1980, the world's production of steel in converters will reach 5.6 million tons/year. In 1978, the world's production in converters was somewhat smaller than the cumulated production of all the other processes.

The proportion of electric arc steel in the world's steel production is still growing: from 10 % in 1960, it went to 13.5 % in 1970, and to 16.5 % in 1979. According to some forecasts, it will reach 41 % in the year 2000, depending on the availability of scrap steel and pre-reduced materials fabricated without coke (iron sponge), and on the cost of electric power, electrodes, and injected oxygen.

During 1978, 43 % of Romania's steel production of 11,779,000 tons was manufactured in Martin furnaces. In 1980, this percentage will decrease to 30-32 %; the production of SM furnaces at Otelul Rosu and Hunedoara will gradually be discontinued as new electric furnaces of 50 and 100 tons will be placed in operation at these plants as well as at Cimpia Turzii, Calarasi, and Tirgoviste. By 1985, our steel production will increase by 15-18 % per year to reach 20-20.4 million tons; 60 % of it will be fabricated in converters with injection of pure oxygen, a process which is more economical from an energy standpoint.

Added to these is the fact that considerable efforts are made to improve the structure of production in order to reduce energy consumption. In future years therefore, more emphasis will be placed on developing the production of low- and high-alloy special steels which will satisfy the needs of the machine building industry (and particularly of peak technologies -- electronics, precision mechanics, optics, aerospace construction, nuclear energy) from domestic resources, including balanced exchanges of types and

sizes with other countries, while conserving energy and fuels. Calculations have shown that if during the next five-year plan we maintain the steel production structure of 1975-1980, we would have to support the additional consumption of about 400,000 tons of conventional fuel.

Greater respect for technologic and plan discipline, rational operation, and quality maintenance and repair of steel production facilities, are other significant areas for conserving energy in all steel combines. At the Tirgoviste Special Steel Combine for instance, accidental outages of electric installations (which mean losses of steel production and power waste) have caused the power consumption of electric furnaces to be 20 % higher than those of the Hunedoara Steel Combine, even though the installations are very properly built. Steps of the type indicated here are also necessary, because steel losses are another form of unjustified power consumption; for instance, up to 2 % rejects (or two tons of steel) per 100-ton charge, which consumed more than 1300 kWh of electricity, were caused by failure to respect technologic discipline, insofar as 300 kg of non-ferrous metals -- copper, chromium, nickel, lead, and zinc -- were introduced into the charge. Not only does this result in the rejection of charges, but it also disqualifies significant quantities of metals. In order to avoid such situations, the specialists who collect and sort scrap iron at Titu and Berceni must select the scrap iron more rigorously and recover all non-ferrous metals, thereby avoiding the rejection of low- and high-alloy steels.

These are of course just a few of the actions that can be taken from among the wealth of possibilities for conserving energy in metallurgy. It is essential that each combine take more intensive action along all channels, to increase production while conserving energy.

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## INCREASED ACCESS TO CONSTRUCTION RAW MATERIALS SOUGHT

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[Article by Ion Folea, director general in the Ministry of Mines, Petroleum and Geology: "Expansion of the Base of Raw Materials for Construction"]

[Text] The achievement of the big program of investments for the rapid economic and social development of the country in the current five-year period and in the future requires intense concern on the part of all specialists for attaining a higher output of construction materials. The wider-scale utilisation of existing natural resources, by finding and applying suitable construction technologies and solutions, is meant to lead to the reduction of material expenditures, of the consumption of concrete-iron, cement, plastic, masonry materials and so on, to the achievement of significant savings of energy and fuel.

The geological work performed in recent years has revealed significant volumes of reserves of rock for construction, reserves that will eventually confer a satisfactory degree of coverage. At the same time, in the binding material and masonry material industries the need for raw materials is almost completely satisfied. In the draft directives, special attention is devoted to developing the base of raw materials as strongly as possible. To this end, the intention is to expand the activity of geological research, to which, according to the provisions, 1.5-1.6 times more funds will be allocated than in the current five-year period.

## The Identification and Unit Dimensioning of the Reserves

Construction in general and the construction material industry in particular use a wide variety of igneous, metamorphic and sedimentary rocks, either in a natural state (crushed or dressed) or after previous physical or chemical transformations, to obtain masonry materials, mineral binding materials and so on. At present, rocks with a low specific gravity, as well as expandable rocks, used to obtain insulation material and light concrete, are wanted more



and more. Geological research work has been performed in many perimeters in order to furnish the base of raw materials. In view of the large volume that these rocks and the products obtained from them (cement and lime) represent in construction, the determination of sources distributed as uniformly as possible over the territory of the country and located as close as possible to the place of consumption has also been pursued, in order to reduce costly transportation as much as possible.

With a view to recording the resources of rocks for construction, the Ministry of Mines, Petroleum and Geology has performed, at the request of the county people's councils and some ministries, additional research work for finding such rocks. Monographs according to counties, in which, along with the objectives investigated and the operations organized, the zones that present prospects of mapping new reserves are also recorded, have been drawn up in order to create a complete picture of the resources of rocks for construction in our country.

As a result, significant reserves of rocks that, as follows from Table 1, confer a high degree of coverage for a long period of time have been located.

#### A Variety of Materials With a Wide Use

The reserves of hard rocks—used in a natural state particularly in the construction and maintenance of roads and railroads, as well as in other construction, in the form of blocks and crushed, rubble and paving stones—cannot be utilized to the maximum due to specific situations. Thus, the granite in northwestern Dobruja could meet all the needs in eastern Wallachia and southern Moldavia both quantitatively and qualitatively if direct transportation by railroad, avoiding transshipment in the port of Braila, were arranged. All the more so at present, one notes the trend of using these crushed rocks as aggregates for concrete, especially in the zones short in natural aggregates, that is, sand and gravel.

The development of production to a level that would also permit the obtaining of aggregates for concrete is possible through the expansion of the capacity of the present quarries that have big reserves (Taul Rosu, Ciciriau-Maramures and Suseni-Harghita) or the introduction of mapped reserves (Zam-Bunedoara, Piatra Tisei-Maramures and Tarcau-Pirul Caprei-Bacau) into the economic circuit. In view of the fact that the present operations in Moldavia, Wallachia and Oltenia do not provide complete satisfaction of the needs in these zones, it is necessary for the MTTc [Ministry of Transportation and Telecommunications], in the capacity of big consumer, carrier and balance coordinator, and the MEPMC [Ministry of Forestry Economy and Construction Materials] to perform geological work for mapping new reserves of limestone, sandstone and granite in the short zones.

Natural aggregates for heavy concrete—that is, sand and gravel—(the balance coordinator being the MEPMC) constitute, from a qualitative viewpoint, the main construction material, whose extraction is done at many work points (ballast pits belonging to the MEPMC and the county people's councils)

situated usually in the beds of rivers and the Danube. In view of the high volume of consumption (nearly 30 million cubic meters per year), of the wide distribution of the sites, and of the need to reduce transportation distances, the organization of operations located as close as possible to the place of use has been pursued.

Table 1. The Base of Raw Materials and the Supply of Reserves of Rocks for Construction

Name of the group of rocks	Unit of measure	Usable reserves		Annual consumption	Supply of reserves (in years)		Number of deposits	
		Total	Including in use (%)		Total reserves	Reserves in use	Total	Including in use
Hard rocks used in a natural state in construction	Thousands of tons	1,707,283	62.3	24,365	70	44	171	120
Ornamental rocks	Thousands of cubic meters	52,054	37.9	218	238	91	55	27
Natural aggregates for heavy concrete	Thousands of cubic meters	1,114,803	47.3	27,409	41	19	204	110
Natural aggregates for light concrete	Thousands of tons	25,235	14.8	396	634	94	10	5
Expandable rocks for light concrete	Thousands of tons	2,052	0.8	4	513	38	12	3
Soft rocks usable as building stone	Thousands of tons	20,950	—	—	—	—	3	—
Rocks for the binding material industry	Thousands of tons	3,816,350	71.6	35,655	107	77	85	42
Rocks for the masonry material industry	Thousands of tons	757,824	69.5	6,954	109	76	162	104

From examining the territorial distribution of the operations, one observes that they are grouped particularly on the Siret, Buzau, Prahova, Arges, Olt, Mures and Someș rivers and on some of their tributaries, as well as in the bed of the Danube, upstream from Calarasi. The main zones short in resources of sand and gravel are: the east of the country, since the Prut River and its tributaries do not run through zones with geological formations from which such alluvium is generated; Dobruja, which does not have rivers, and the alluvium of the Danube downstream from Calarasi is sandy and clayey; and the center of Oltenia and the flat zone in the south of the country, where, due to the slow velocity of flow of the rivers, only fine particles, unsuitable for making concrete, are transported and deposited.

In order to create a comprehensive picture of the prospects of increasing the reserves of sand and gravel and thus the production, depending on the perimeters with known reserves and on the hydraulic engineering installations, the MPPG /Ministry of Mines, Petroleum and Geology/ has turned to the preparation of synthesis studies according to hydrographic basins, on the basis of which it will be possible to provide a sensible orientation of the geological work.

Since the demand for natural aggregates for concrete is not completely satisfied at present and in order to supplement the base of raw materials with sources located as close as possible to the place of consumption, in the light of the recommendations in the draft directives, a number of measures seem necessary:

The development of the present operations and the introduction into the economic circuit of the known reserves included in the monographs drawn up and put at the disposal of those involved;

Research by the using units on new sources located as close as possible to the places of consumption;

The extraction of the sand and gravel in the storage lakes on rivers, which will also lead to retardation of the phenomenon of siltation;

The utilization of other sources of sand and gravel as well, such as the material resulting from dredging on the Danube and that from the cover over the beds of lignite in Oltenia;

The expansion of the use of crushed aggregates, if from the technical and economic calculations it follows that the additional expenses are counterbalanced by a reduction of the transportation distance for sand and gravel. In this way it is possible to utilize the limestone in Dobruja and Oltenia, the green schist in Dobruja, the amphibolite in Oltenia, and so on.

#### Substitutes for Energy-Intensive Materials

The construction sector too can be aligned with the current concern for reducing the consumption of energy in different forms, a basic task of the

directives of the 12th congress, through the utilization of rocks that provide better thermal insulation, a reduction in the weight of constructions, and substitutes for construction materials that are obtained with a high consumption of energy (cement, lime, plastic and masonry materials). The following types of rocks can be taken into consideration for achieving these desires:

Natural aggregates for light concrete. This group includes rocks that are used in a natural state, after at most an operation of crushing and sorting, in the making of concrete. Of them, the basaltic scoria in the Racosul de Jos-Valea Bogatii zone and the diatomite in Patirlagele, Adamclisi, Filia and Minis are to be mentioned. The significant volume of reserves revealed permits the development of current production, which is still not at the level of the possibilities. Volcanic tuff, which is widely distributed in Transylvania, in Vilcea, Prahova and Bacau counties, can also be included in this category. The geological research will have in view the attraction of other similar rocks into the economic circuit, such as, for instance, the andesitic scoria in the Lazaresti-Turia zone. Considering that these rocks are extracted easily, that they do not require costly processing and that through their use the consumption of cement and steel is reduced and the constructions, for which they also provide good thermal insulation, are lightened (the specific gravity of the main aggregates for construction is noted in Table 2), it is necessary that they be utilized to a greater extent, in proportion to the reserves revealed.

Table 2. The Specific Gravity of the Main Aggregates

Name of the aggregate	Specific gravity (tons per cubic meter)
Sand and gravel	1.8-2.2
Light natural aggregates	
volcanic tuff (7-16 millimeters)	0.7-0.9
basaltic scoria (7-16 millimeters)	0.75-0.8
diatomite	0.3-0.4
Expandable rocks	
granulite	0.7-1.0
expanding perlite	0.1-0.5
expanding dacite	0.4-0.8

Expandable rocks, used in the making of light concrete and in insulation. This category of rocks includes the perlite in the Orasu Nou zone, as well as different types of clay from which so-called granulite is obtained as a result of an operation of heating under certain conditions. These expanding rocks have, in the case of the obtaining of superior characteristics, special properties of thermal insulation, thus making possible the replacement of plastic in certain constructions. However, the reserves of perlite mapped thus far are utilized only to a slight degree in a pilot plant. In view of the importance that these rocks have for construction, the geological research is oriented toward the identification of new accumulations of perlite in the Orasu Nou zone. At the same time, special attention is also being



devoted to the identification of other rocks that exhibit similar properties, such as, for example, the dacite in Valea Tiganului-Negresti. At the same time, it is recommended that tests be performed to establish the expandability of clays that are used at present in the ceramics and cement industries.

Soft rocks, usable as building stone. Rocks that can be extracted easily, by hand or machine, in order to be used as masonry material, are known under this name. The expansion of their use is leading to the reduction of the consumption of cement, as well as of the standard masonry materials, which are obtained with a high consumption of energy. These rocks can have a wide use in rural construction, thus helping to significantly reduce transportation costs. Reserves of soft limestone in Podeni and of volcanic tuff in Persani, from which, with suitable equipment, it is possible to extract dressed blocks, which are used directly as masonry material, have been mapped thus far. Certain kinds of limestone, sandstone or tuff that can be detached in plates and dressed easily in order to be used in local construction can also be included in this group of rocks. The geological research in this sector is to be oriented toward qualitative and quantitative knowledge of the gritty limestone in the Codru Babadag-Slava Rusa zone, the limestone and the chalky sandstone between the Siret and the Prut, and the limestone in southern Dobruja and in Buzau and Prahova counties. Special attention is being devoted to volcanic tuff, which, due to the prospects of also being utilized in a complex fashion in other field of the economy, confers the certainty of complete utilization of the reserves.

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